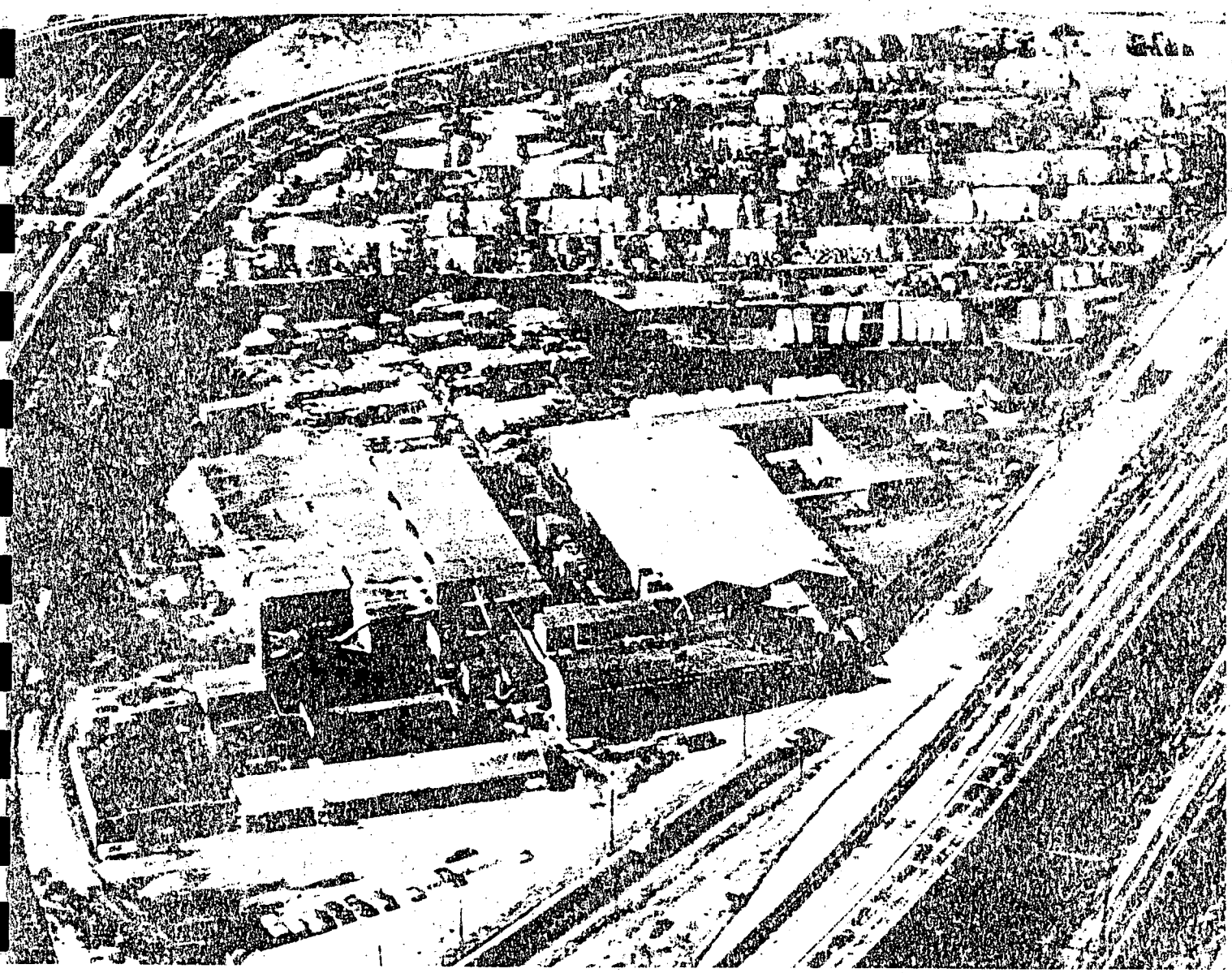
RCRA CLOSURE PLAN

AND

CERCLA REMOVAL ACTION WORK PLAN

VOLUME I



BAYONNE BARREL & DRUM COMPANY
NEWARK, NEW JERSEY

FEBRUARY 1992

EPA ID NO. NJD - 009871401

Foreword

Diversified Environmental Resources, Inc. was contracted to prepare this RCRA Closure Plan for the Bayonne Barrel and Drum Company (BB&D) pursuant to a consent agreement entered into between the U.S. EPA and BB&D on September 3, 1984. Environmental Risk Limited, Inc. was subcontracted by Diversified Environmental Resources, Inc. to assist in the preparation of this closure plan. This plan was prepared in accordance with 40 CFR parts 112, 197 and 351 and corresponding New Jersey Administrative Code (N.J.A.C. 7:26-9.8, 7:26-10.4(c), 7:26-10.5(h) and 7:26-10.7(I) as set forth in the Consent 7Agreement.

Diversified Environmental Resources, Inc.

SECTION

1

1.0 INTRODUCTION

On May 20, 1982, the Bayonne Barrel and Drum Company was cited for violations of the Resource Conservation and Recovery Act (RCRA) by the United States Environmental Protection Agency (U.S. EPA). The violations cited by the U.S. EPA included the storage of hazardous waste ash without a hazardous waste permit. Two months later the company filed a petition under Chapter II of the Bankruptcy Code (II U.S.C. 101 et seq).

On September 3, 1984 the Bayonne Barrel and Drum Company entered into a Consent Agreement and Order (Docket No. II RCRA-82-0115) with the USEPA to address the violations cited on May 20, 1982. The agreement stipulated, in part, that if the Company no longer wished to continue to operate, a RCRA Closure Plan would be prepared and submitted to the U.S. EPA for review and approval.

On November 30, 1988 a preliminary Closure Plan was prepared by Interwaste Services Co. and V.J. Ciccone & Associates for Bayonne Barrel and Drum Company facility and submitted to the USEPA for review and approval. The U.S. EPA indicated that the Preliminary Closure Plan was inadequate and requested the submittal of a Closure Plan which addressed those concerns.

This Closure Plan is intended to address the U.S. EPA's request and to provide a comprehensive approach to the final closure of the Bayonne Barrel and Drum Company facility consistent with the agreement entered into with the U.S. EPA on September 3, 1984.

2.0 SITE DESCRIPTION

2.1 GENERAL

The Bayonne Barrel and Drum Company was founded in 1940 as the result of the merger of two companies; the Bayonne Barrel Company and the Export Barrel Company. During the late 1930's or early 1940's steel drums were at a premium due to the war effort and Bayonne Barrel and Drum began reconditioning steel drums. From the 1940's until the operation ceased in 1982, the reconditioning facility was developed as described in section 3.0 of this plan. In general, RCRA empty drums were received at the site for reconditioning either for specific customer re-use or for general re-sale. Although the mechanical means for handling and reconditioning drums changed over the life of this facility, the processes reportedly remained similar.

2.2 LOCATION

The Bayonne Barrel and Drum Company is located at 150 Raymond Boulevard, Essex County, Newark, New Jersey. The site is situated on approximately 14.5 acres of land. The site is bounded to the north by the Pulaski Skyway, Routes 1&9 to the west, the New Jersey Turnpike to the east and southeast, and vacant land, previously occupied by the Newark Drive-In to the south (Drawing BB-001). The site is currently comprised of two tracts of land as listed below.

Tract 1 - 8.966	Acres -	Bayonne Barrel & Drum
Tract 2 - 5.539	Acres -	Frank Langella, Principal of Bayonne Barrel and Drum

TABLE OF CONTENTS

TABLE OF CONTENTS CONT'D.

TABLE OF CONTENTS CONT'D.

TABLE OF CONTENTS CONT'D.

TABLE OF CONTENTS CONT'D.

TABLE OF CONTENTS CONT'D.

TABLE OF CONTENTS CONT'D.

Diversified Environmental Resources, Inc.

TABLE OF CONTENTS CONT'D.

SECTION

2

2.3 SOIL CHARACTERISTICS AND GEOLOGY

The site is reportedly located in an old floodplain of the Passaic River. Site topography generally slopes to the east northeast across the site. Elevations of the property range from approximately 10 feet above mean sea level (MSL) to approximately 20 feet above MSL. Surface drainage follows the topography east to a series of storm drains along the eastern property line. The storm drains were constructed during the construction of the N.J. Turnpike to re-direct the remaining flow of Harrison creek, which historically traversed this property. The storm drains are believed to discharge to the Passaic River.

The site is underlain by Pleistocene drift deposited during the Wisconsin glaciation. The drift is underlain by the Brunswick Formation. Soil lithologic data presented by Dan Raviv and Associates substantiate the presence of coal cinders and ash across the site to an average depth of ten feet below the surface elevation. Fill is reported at boring BBDC3 by Raviv to be underlain from approximately 10 feet to forty feet "by a medium to coarse grained, well sorted sand that ranges in color from brown to red-brown to dark maroon-brown. The material observed from forty to fifty feet below surface consists of a dark red-brown, uniform, coarse silt. Below fifty feet, small fragments of dark red shale were observed."

Although specific records are not available, the northern third of the property is also presumed to have been filled prior to the construction of the original buildings occupied by BB&D.

Fill material in the southern portions of the site consist of refuse of an undefined nature deposited by the City of Newark during the operations of the old Newark Landfill, currently referred to by the NJDEP as the "15E Sanitary Landfill". Fill material in the central portion of the site includes cinders and ash reportedly from a neighboring power generating facility. This material was used as a construction base for the expansion of the BB&D company.

2.4 BUILDINGS AND STRUCTURES

Nine (9) buildings currently exist at the site as shown on DWG BB-001. They are as follows:

Bldg # 1	29,000 sq.ft.	Concrete block building used for the reconditioning of closed head drums, and for shot blasting open and closed head drums
Bldg # 2	2,250 sq.ft.	Drum staging building for preparation for the furnace
and	760 sq.ft.	Furnace for the cleaning of drums
Bldg # 3	14,000 sq.ft.	Concrete and brick building used to receive open head drums immediately after cleaning in the furnace
Bldg # 4	20,000 sq.ft.	Transite and steel building used for the reconditioning of open head drums
Bldg # 5	4,000 sq.ft.	Paint storage building
Bldg # 6	5,400 sq.ft.	Office building
Bldg # 7	9,300 sq.ft.	Machine shop and maintenance garage
Bldg # 8	2,400 sq.ft.	Boiler House
Bldg # 9	1,750 sq.ft.	Service Building

In addition to the buildings referenced above, additional structures at the site include; a water separator trench, a 5,000 gallon separator tank, a 60,000 gallon above ground tank utilized for the settling of water prior to discharge to the sewer, two (2) underground collection tanks at the end of the furnace, and a collection/separator trench located adjacent to the furnace. Two (2) additional above ground storage tanks are located in the water separator area. These tanks were reportedly never put into service.

2.5 OPERATIONS SUMMARY

RCRA empty open head drums and closed head drums were received at the facility via truck for reconditioning. According to the owner of BB&D, drums were received from a wide variety of industries involved in the production or handling of foodstuffs, chemicals, wastes, etc. Upon receipt, the drums were staged in rows according to client and/or drum type prior to processing or were transferred directly from incoming trucks to operation areas for reconditioning.

Drums were handled on a first-in, first-out basis. Empty drum storage areas were laid out in rows in such a fashion as to store one hundred drums in each tier to facilitate inventory control.

All drums were sorted with regard to size, gauge, customer and general condition. Drums received in small quantities were stored close to the beginning of each operation. Drums were transferred from yard storage to production areas with four specially designed trucks. Yard trucks were for use on the premises only.

2.5.1 Closed Head Drum Reconditioning

Closed head drums were chemically and mechanically cleaned in the following manner:

Off-loading

Drums were transferred from incoming trucks or the drum storage areas to Building No. 1 for processing. Drums were unloaded onto a single-track conveyor where caps and bungs were removed or loosened. Labels were coated with a solvent material to facilitate removal during the washing operation. At this time drums were inspected and marked for subsequent de-denting operations.

Pre-Flusher No.1

The drums travelled on the conveyor parallel to the first pre-flusher. The pre-flusher consisted of 25 jets that projected approximately 6 inches into the interior of an inverted drum. The drums were washed in a common bath that contained approximately 4,000 gallons of detergent solution. The solutions included caustic soda mixed at a proportion of one half pound per gallon of water or other formulations.

The solution temperature was maintained between one hundred and ninety and two hundred degrees. Solution was pumped into drums with a 25 horsepower centrifugal pump delivering approximately fifty gallons per minute into each drum. Drums were left on this unit for approximately three (3) minutes. According to the owner, approximately 95% of their previous contents were removed during this process.

Pre-Flusher No.2

The drums were then conveyed to a second pre-flusher, constructed and operated similarly to the first pre-flusher. Stronger detergent or caustic solutions were utilized in this process.

Double End Chime Straightener & Re-Sealer

A single track conveyor, running parallel to the second pre-flusher, conveyed the drums to a star wheel that fed drums into the Double End Chime Straightener & Re-Sealer. Two sets of wheels pressed on the bottom of the chime exerting a pressure of approximately 1,500 pounds per square inch, which straightened and re-sealed the chime.

De-Denting

Upon completion of the cleaning, the drums were inspected again and previously marked dented drums were sorted and removed for de-denting. Drum temperatures raised during the cleaning operations made them more amenable to the de-denting process.

Drums were placed on a bottom dished chuck which closed the doors of the de-denting machine and sealed the top of the drum with a rubber gasket. Approximately 40 lbs of air pressure was introduced into twenty gauge drums and sixty lbs of air pressure was introduced into eighteen gauge drums for de-denting. Drums were rotated at approximately 30 revolutions per minute (RPM) while two ironing wheels contacted the rolling drum hoops and sides to facilitate the de-denting process.

Chain Insertion Area

Although the pre-flushing operation removed the majority of the prior drum contents, some drums still had evidence of prior contents. Chaining operations were utilized to remove these material through friction. Approximately fifty pounds

of chains, in lengths of approximately 3 feet, were introduced into the drum. A specially designed bung was placed in the drum in order to keep the chains from escaping and to allow the introduction of cleaning solution during the subsequent processes.

First Sub-Stripper

Drums were automatically fed into the sub-stripper by means of a star wheel at the entrance. Thereafter, drums were rotated in approximately 8 inches of hot detergent solution on individual track wheels at approximately 30 RPM. The solution tank was approximately fifty feet long and five feet wide and contained approximately 2,000 gallons of detergent solution. Steel brushes within this tank were also utilized in this process to facilitate label and paint removal in preparation for subsequent operations.

Upon completion of the first sub-stripper process, drums were transferred to an identical second sub-stripper. On completion of the second sub-stripper, drums were fed into a conveyor that raised the drums out of the solution into an up-ender. This process inverted the drums and solution was drained for re-use.

Head Chaining

Drums conveyed from the first sub-stripper were fed onto a receiving device that automatically tilted and conveyed the drums through a machine that "chained" the bottom of the head through contacting traction wheels. Drums were rotated at a rate of approximately 30 RPM during this process while being mechanically pushed from the front to the back of the machine. Upon reaching the rear of the machine, drums were automatically turned over and the other end of the drum was subjected to the same process.

Upon completion of this process, drums were automatically conveyed to the chain removal area, where chains previously inserted into the drums were removed and directed back to the chain insertion area for cleaning and inspection.

External Rinse

Drums were then conveyed into an external rinse by pusher arms where they were rotated at approximately 30 RPM and rinsed with water to neutralize and remove detergent solutions. Thereafter, drums were placed onto a turntable device that placed them onto a conveyor.

Bung Insertion Area

Drum specific bungs were placed into drums in this area. A 1/2 inch opening was left in the head of each drum for subsequent testing.

Leak De-Denting

Sealing plugs were inserted into the drums which were injected with approximately 7 pounds per square inch (PSI) of air. Drums were submerged in water solution and visually inspected for leaks.

Rinse-Matic

Drums were conveyed to a thirteen station, three rinse process "rinse-matic" machine where they were automatically rinsed, steamed, air-dried and siphoned. Thereafter, drums were automatically conveyed to a device which turned the drums over for internal inspection.

Drums that were not suitable for use as "bung type" drums, were directed to a de-heading and beading operation.

Shot Blasting

All drums were shot-blasted to remove paint and labels and insure that they were clean for proper paint adhesion. The drums were fed into this machine via a star wheel and mechanical pushers. Drums were rotated at approximately 30 rpm and cleaned with very fine steel grit to remove all foreign substances without damaging them. Thereafter the drums were painted and baked prior to storage or loading for off-site distribution.

2.5.2 Open Head Drum Reconditioning

Open head drums were transferred from the incoming drum storage areas to a staging area located immediately south of the furnace building, Building No. 2. The drums were staged according to specific sizes and types in preparation for cleaning. Drums were placed on a conveyor which extended 200 feet from the yard area to Building 2 and directed drums to the furnace.

Drum Preparation

The drums were transferred to Building 2 where bolts, locking rings etc. were removed prior to being placed in an inverted position on a second conveyor going to the drum burning furnace. This second conveyor extended through the furnace into Building 3. Drum covers were generally placed on the top of drums. Drum rings were stacked on the conveyor.

Drum Burning

The drums, covers, and rings were conveyed through the furnace which was made up of three separate zones. The first two zones were controlled to maintain a temperature between 1,000°F and 1,200°F. The third and final zone of the furnace was maintained at a higher temperature to serve as an afterburner.

Furnace Unloading Area

Drums exiting the furnace were washed and cooled with a water rinse prior to entering Building 3. Water and ash generated during this process was collected in two (2) subsurface tanks of an unknown size and recirculated in a concrete trough running parallel to and west of the furnace. The trough measures approximately 95' long by 2.5' wide and is reported to be between 2.5 and 5 feet deep. Rinse waters no longer amenable for use in cooling were reportedly discharged via underground pipes to the water separator area. The drums, covers and rings were then fed to separate departments for processing.

Shot Blasting Machine

Covers were shot blasted in a separate machine in an adjacent room. Cooled, cleaned drums were transferred to the rear of Building No.1 where they were shot blasted in preparation for de-denting and painting. The drums were placed into a specially designed machine which shot blasted the interior and exterior of the drums. After drums were clean, they were conveyed approximately one hundred and fifty feet to the open head drum de-denting department.

De-Denting and Re-Rolling Department

Drums conveyed to this department were de-dented and chime sealed in a similar fashion to that described for closed head drums.

Inspection and Painting

Upon completion of the reconditioning processes, the drums were inspected and painted according to customer specifications and were placed onto trailers for shipment off-site.

2.6 WASTE MANAGEMENT

Wastes generated during the operation of the Bayonne Barrel and Drum Company included ash from the drum cleaning furnace, sludges from the settling tanks and wastewater. Ash and sludge were disposed of off-site as RCRA hazardous (EP Toxic) and non-hazardous solid wastes. Wastewater was treated at the facility to remove sediments and oil in the wastewater treatment area. Treated water was discharged under permit to the Passaic Valley Sewer Authority.

SECTION

3

3.0 SITE LAND USE HISTORY

The Bayonne Barrel & Drum Co. (BB&D) site consists of an 8.966 acre parcel of land described as lots 3, 5, and 16 in Block 5002, Newark, Essex County, New Jersey and a 5.539 acre parcel of property described as lot 14 in Block 5002, Newark Essex County, New Jersey owned Mr. Frank Langella. Mr. Langella leased this property to BB&D for use in connection with its recycling operation. The meets and bounds of these two properties are provided on Dwg. Sheet BB-001 (Site Plan) and BB-002 (Existing Site Conditions). These two properties are collectively referred to as 150 and 154 Raymond Boulevard Newark, New Jersey, which is the subject of this RCRA Closure Plan.

The properties now owned by Bayonne Barrel and Drum and Frank Langella have been subject to numerous sources of environmental contamination prior to their acquisition of the land. This section presents the history of the acquisition of the property and, to the extent known, the history of the uses of the property prior to BB&D's operation.

3.1 HISTORY OF ACQUISITION

3.1.1 Initial Acquistion

In approximately 1940, Bayonne Steel Drum merged with Export Barrel Co., which owned three acres of property which now comprises the northern end of the existing BBD property. At the time that Bayonne Steel Drum merged with Export Barrel Co., the name was changed to Bayonne Barrel & Drum Co. It is believed that this portion of the property was filled at some time prior to 1931 to facilitate construction of the two "original" buildings (Building No.s 3,6 & 7). The original date of construction of these buildings is unknown and the original use of the buildings is not fully know. One of the original uses of the "original" buildings is reported to have been a leather tannery. According to Mr. Langella, hides were hanging on the walls of the original buildings when he first occupied them.

BB&D operated it's reconditioning operations on this property throughout the forties. As shown on a 1949 aerial photograph of the property, BB&D's operations were limited to the south by wetlands then owned by the Episcopal Diocese of the City of Newark. The northern and western property boundaries were bordered by an exit ramp connecting Rts. 1 and 9 to Raymond Boulevard. The eastern boundary extended approximately 250' east of the current property line.

3.1.2 Episcopal Diocese Property

In the early 1950's BB&D acquired from the Episcopal Diocese of the City of Newark, a parcel of approximately four acres of land located immediately south of its existing property. At the time of acquisition, the property was predominately wetlands. Active landfilling operations existed on the western portion of that parcel.

3.1.3 New Jersey Turnpike Authority

During the early 1950's, the New Jersey Turnpike Authority (NJTA) condemned several acres of BB&D's property for the construction of the New Jersey Turnpike. The area which was condemned included the eastern ±250' of empty drum storage and the majority of the area occupied by a lagoon also shown on the 1949 photograph. The property was subsequently filled by the NJTA with materials of unknown source and quality for the construction of the Turnpike. At this time the NJTA also realigned Harrison Creek.

The NJTA subsequently negotiated with BB&D and granted title of additional land contiguous to BB&D's remaining property to it. As a result of these transactions BB&D acquired the title to its present 8.966 acres of property, lots 3, 5, and 19 in Block 5002.

3.1.4 Yeskel Property

Frank Langella acquired an additional 5.539 acres of property from a Mr. Yeskel in the late 1950's which he leased to BB&D. That property is shown on Dwg. Sheet 1. The Yeskel property is comprised of a portion of a sanitary landfill which was operated by the City of Newark and is currently known as the "15E Sanitary Landfill".

3.1.5 Easements

Two easements appear to exist at this site. The first is reported to be a thirty foot right of way to Texas Eastern Transmission Corporation through the 5.539 acre parcel owned by Frank Langella. Texas Eastern has no knowledge or records of this easement. The second easement is a thirty foot right of way owned by Transcontinental Gas Pipeline Corporation. Both of these easements are used for natural gas pipelines.

3.2 HISTORICAL USE

Prior to BB&D's acquisition and use of lots 3, 5, and 16 in Block 5002, and its use of lot 14 in Block 5006, the property was subjected to numerous other sources of environmental contamination which are believed to persist at the property today and have a significant impact on BB&D's ability to identify and mitigate environmental contamination associated with it's own waste management activities. For this reason, BB&D has investigated the past use(s) of the property to identify, to the extent possible, the environmental contaminants which existed at the property prior to its acquisition by BB&D (see Dwg. Sheet No. BB-003).

3.2.1 Background Investigation

Substantial background information has been identified concerning the use and environmental condition of the BB&D properties and adjacent properties. This information includes the following reports:

- Preliminary Site Investigations
  New Jersey Turnpike
  1985 - 1990 Widening from Passaic River to Milepost 103
  Historical Survey of Possible Sources of Contamination within and adjacent to the Proposed Turnpike Right-of-Way.

  Submitted to: New Jersey Turnpike Authority
  P.O. Box 1121
  New Brunswick, New Jersey

  Submitted by: Louis Berger & Associates
  East Orange, New Jersey

  December, 1986

- Results of Preliminary Investigations and Sampling in Proposed New Jersey Turnpike Right-of-Way at the Bayonne Barrel and Drum Property, Newark, New Jersey.

  Submitted to: New Jersey Turnpike Authority
  P.O. Box 1121
  New Brunswick, New Jersey

  Submitted by: Louis Berger & Associates
  100 Halstead Street

East Orange, New Jersey

December, 1986

- Results of Preliminary Investigations and Sampling in Proposed New Jersey Turnpike Right-of-Way at the Former Newark Drive-In Property, Newark, New Jersey.

  Submitted to: New Jersey Turnpike Authority
  P.O. Box 1121
  New Brunswick, New Jersey

  Submitted by: Louis Berger & Associates
  100 Halstead Street
  East Orange, New Jersey

  September, 1986

- Soils and Groundwater Characterization Bayonne Barrel and Drum Company, Newark, New Jersey.

  Submitted to: Schneider & Weiner, P. A.
  Attorneys at Law
  1180 Raymond Boulevard
  New Brunswick, New Jersey

  Submitted by: Dan Raviv Associates, Inc.
  5 Central Avenue
  West Orange, New Jersey

  April 18, 1986
  Updated: July, 1986

- Summary Report of the Test Pit and Monitoring Well Investigation at the Newark Drive-In Site, Newark, New Jersey

  Submitted to: National Amusements, Inc.
  200 Elm Street
  Dedham, Massachusetts 02116

  Submitted by: Wehran Engineering Corp.
  666 East Main Street
  Middletown, New York 10940

  October, 1988

- Preliminary Site Assessment Bayonne Barrel and Drum Company, Newark, New Jersey

  Submitted to: Dave Rogers
  Response & Prevention Branch
  Office of Emergency and Remedial Response
  U.S. E.P.A. , Region II
  Edison, New Jersey 08837

  Submitted by: Christopher S. E. Marlowe
  Region II, Technical Assistance Team
  Weston/SPER Division
  Edison, New Jersey 08837

  August, 1989

- RCRA Enforcement Inspection
  Bayonne Barrel and Drum Company
  Newark, New Jersey
  NJD009871401
  June 2, 1988

  Submitted by: Response & Prevention Branch
  Office of Emergency and Remedial Response
  U.S. E.P.A. , Region II
  Edison, New Jersey 08837

  August 19, 1988

Copies of each of these reports are provided as Appendices to this Closure Plan. Based on a review of these background reports and NJDEP and USEPA files concerning the BB&D and other adjacent properties, the following historic environmental conditions have been identified at the BB&D site.

3.2.2 "15E Sanitary Landfill"

As early as 1934, aerial photographs reveal a landfill operation on the southern end of what is now the BB&D site. The landfill is known as the "15E Sanitary Landfill". According to the Louis Berger & Associates, Inc. report entitled Preliminary Site Investigations; New Jersey Turnpike 1985-90 Widening from Passaic River to Milepost 105 (Preliminary Site Investigation), the landfill originally commenced operation at Foundry Street on Lot 11, Block 5002 and progressed onto the Bayonne Barrel & Drum site, and east towards Doremus Avenue. The progression of the landfilling operation continued throughout the 1940s. By 1947 the landfill occupied all of the property currently owned by Frank Langella (lot 14, Block 5002) and a substantial portion of the property now owned by the BB&D. The progression of the growth of the landfill is shown in Figures 3-1, 3-2 and 3-3.

A 1949 aerial photograph of the area shows the "15E Sanitary Landfill" to encompass approximately 45 acres. All of lot 14, Block 5002, owned by Frank Langella and the majority of the southern half of BB&D's property is comprised of uncovered waste materials.

In the early 1950s, landfilling activities ceased. The New Jersey Turnpike Authority (NJTA) constructed the turnpike and the 15E interchange on the landfill. The Newark Drive-In was constructed on lots 11 and 12 in Block 5002 over approximately 19.2 acres of the "15E sanitary landfill". Bayonne Barrel & Drum and Frank Langella acquired and developed approximately 8.06 acres of the "15E Sanitary Landfill" as described in Section 3.1, during the 1950s. As a result of these activities, the original footprint of the "15E Sanitary Landfill" was covered by new construction. The site was not registered with the NJDEP until it was discovered during the Preliminary Site Investigation performed by Louis Berger & Associates, Inc. in 1986.

The discovery and delineation of the "15E Sanitary Landfill" by Louis Berger & Associates, Inc., coupled with the U.S. EPA's enforcement action against BB&D and attempts by National Amusements, Inc. to redevelop a portion of the old Newark Drive-In, has caused several independent studies to be undertaken at portions of the landfill. The reports are listed in Section 3.2.1 and are provided in Appendices B

through F. Each of the studies concludes that the "15E Sanitary Landfill" is contaminated with a wide variety of organic and inorganic contaminants. As a result, the landfill has been classified as a Major Industrial Discharge by the New Jersey Department of Environmental Protection, Division of Water Resources (NJDEP). The NJDEP has issued a Discharge to Groundwater (Permit #NJ006408) to the current owners of the properties which comprise the 15E Sanitary Landfill. The property owners, which NJDEP has identified as co-permittee's are; Bayonne Barrel & Drum Company, Edle Realty, The Joman Realty Company, Mr. Frank Langella, and the New Jersey Turnpike Authority.

An analysis of the information available from the studies of the old Newark Drive-In and the BB&D site indicates that the contaminants and their concentrations in the soils at both sites are similar. This demonstrates that much of the contamination identified in the soils at the BB&D site is the result of the prior use of the property as a landfill. A comparative analysis of the environmental contaminants is provided in Table 3-1.

Dan Raviv Associates, Inc., Louis Berger & Associates, Inc., and Wehran Engineering Corp. have drawn conclusions about the nature and source of many of the contaminants in their respective reports which confirm that much of the contamination identified at the BB&D site was caused by the landfilling of waste materials and the application of insecticides.

3.2.3 Bottom Ash

When BB&D expanded its operations in the early 1950s, it contracted with McCaffery Contracting Co. of Newark to fill the property it acquired from the Episcopal Diocese of the City of Newark with bottom ash from the Public Service Electric & Gas generating station. Subsequently, the entire southern portion of the property was filled with bottom ash to provide a stable base for its operations. The approximate limits of the ash are shown on Dwg. Sheet BB-002.

Bottom ash from the combustion of coal is know to contain high levels of heavy metals.

TABLE 3.1

Compound	BBD	Newark-Drive-In	Clean-Up Levels Used By BEECRA
PHC	173,000.0 Mg/Kg	2,970.0 Mg/Kg	100 Mg/Kg
PAH	110.0	30,000.0*	10 Mg/Kg
VOC'S	851.0	413.0	1 Mg/Kg
PCB	320.0	41.0	1-5 Mg/Kg
BN	861.5	478.1	10 Mg/Kg
Metals:			
Lead	8,520.0	15,400.0	100 Mg/Kg
Zinc	6,120.0	2,180.0	350
Copper	1,580.0	788.0	170
Calcium	71.0	10.7	3.0
Arsenic	73.0	198.0	20
Chromium	790.0	131.0	100
Iron	---	89,600.0	Individually Determined
Pesticides:			
4,4' DDD	ND	68.0	Individually Determined
4,4' DDT	---	9.2	Individually Determined
4,4' DDE	.140	3.5	Individually Determined
Endosulfan Sulfate	.160	.250	Individually Determined
Endrin Aldehyde	.065	---	Individually Determined

*Over 3% of sample

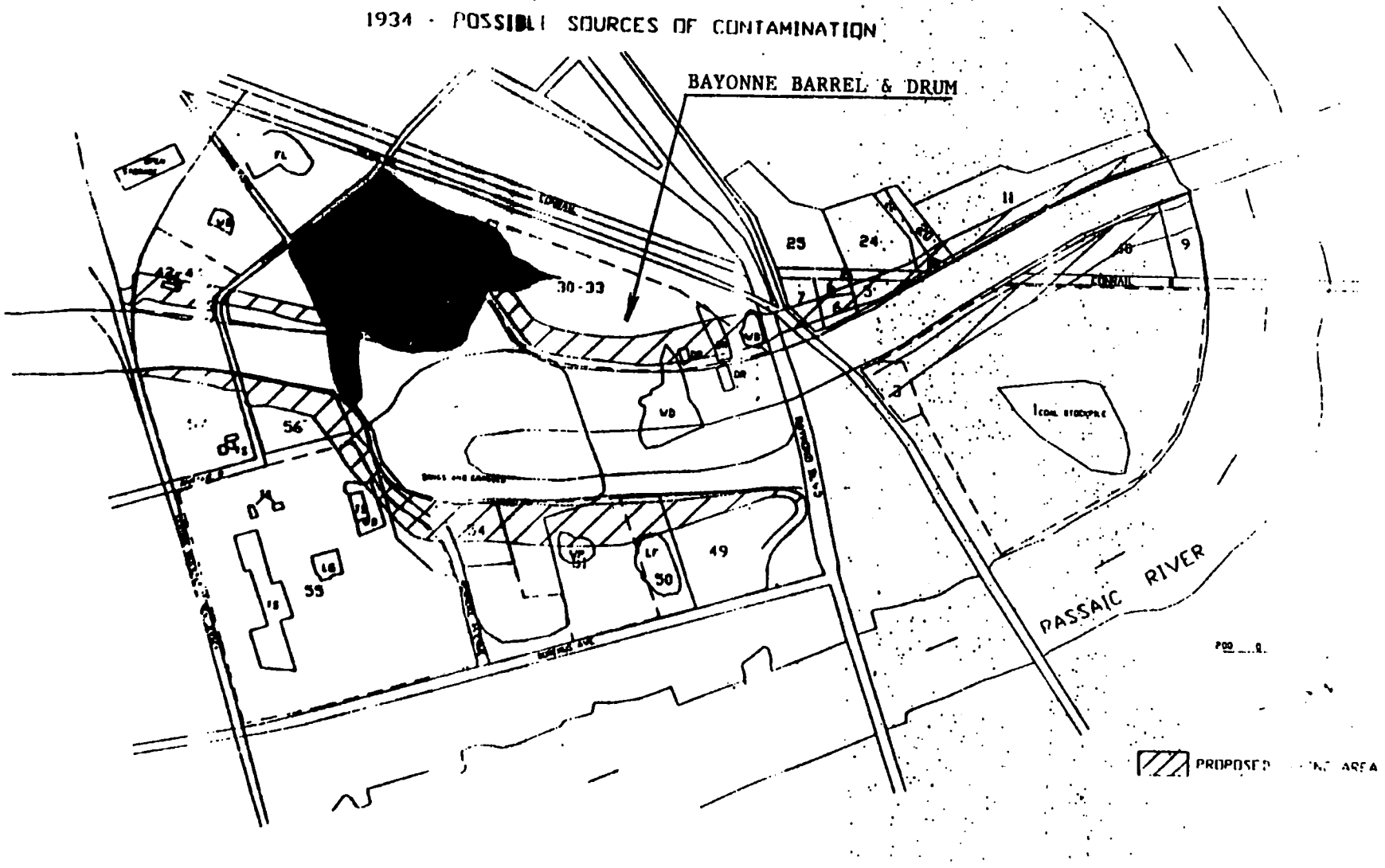

1934 - POSSIBLE SOURCES OF CONTAMINATION
BAYONNE BARREL & DRUM
CONRAIL
30-33
25
24
11
9
56
55
49
50
PASSAIC RIVER
PROPOSED

Figure 3-1

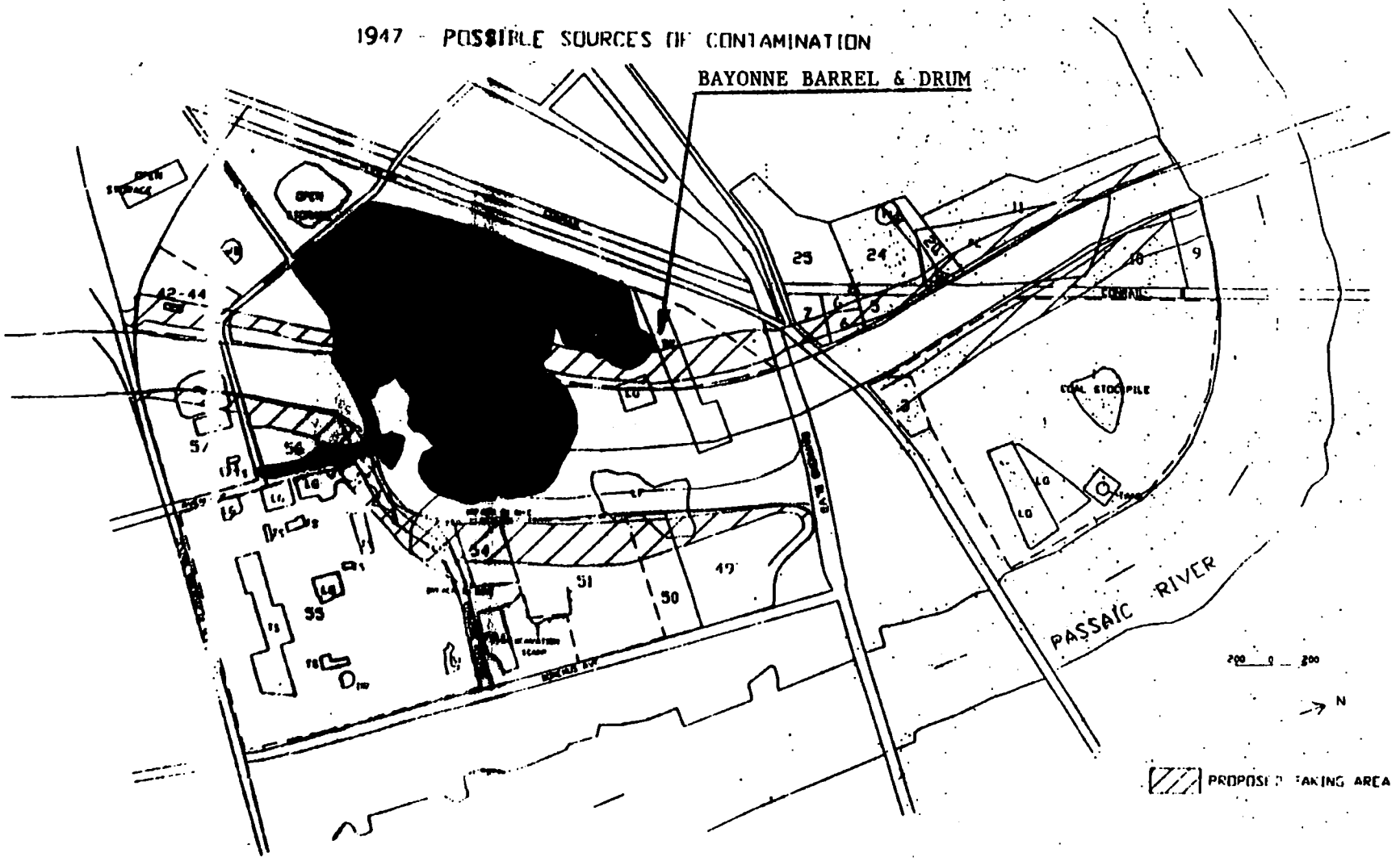

1947 - POSSIBLE SOURCES OF CONTAMINATION
BAYONNE BARREL & DRUM
42-44
57
56
54
55
51
50
49
25
24
23
11
10
9
7
6
5
3
COAL STOCKPILE
LG
PASSAIC RIVER
200 0 200
N
PROPOSED TAKING AREA

Figure 3-2

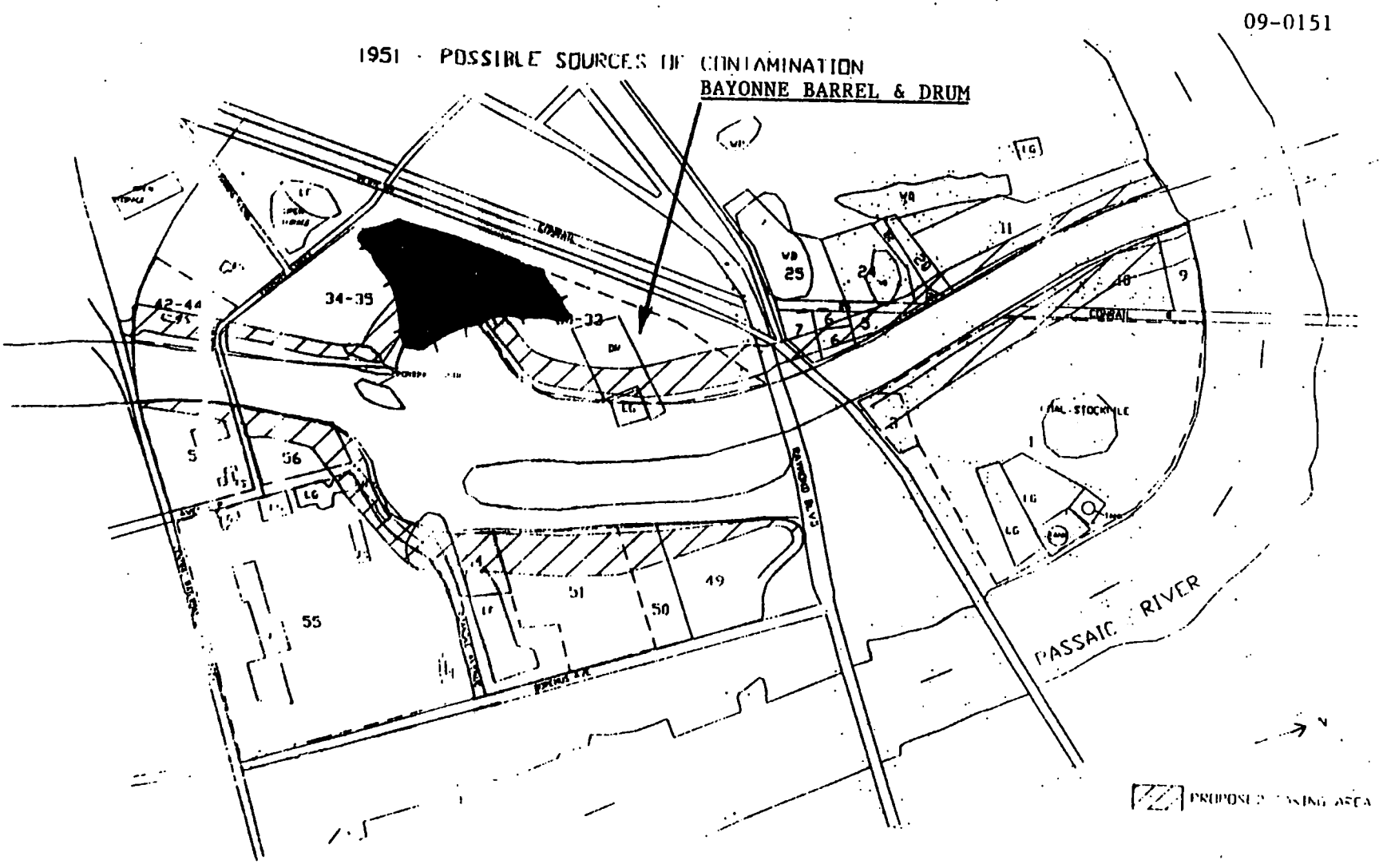

1951 - POSSIBLE SOURCES OF CONTAMINATION
BAYONNE BARREL & DRUM
34-35
42-44
56
55
51
50
49
25
24
11
9
PASSAIC RIVER
PROPOSED DREDGING AREA

Figure 3-3

SECTION 4

4.0 REGULATORY ISSUES

In addition to being required to comply with the RCRA Closure requirements established by the U.S. EPA, Bayonne Barrel and Drum Company and Frank Langella are also subject to other New Jersey State environmental regulations by virtue of the original uses of the property by others. The purpose of this section is to present an overview of the entire environmental regulatory scheme to which the Bayonne Barrel and Drum property is currently subject and, to present the company's approach to satisfying all applicable State and Federal regulations in an orderly and responsible manner.

4.1 RCRA CLOSURE

Bayonne Barrel and Drum is subject to regulation under RCRA for Closure of "regulated units" associated with its management of hazardous waste. Through the implementation of this Closure Plan, Bayonne Barrel and Drum intends to remove the RCRA hazardous waste associated with its operations, to remove surficial PCB's greater than 50 ppm to decontaminate the solid waste management units associated with the generation and storage of hazardous waste and to remove contaminated soil associated with the operation of those units. Specifically, Bayonne Barrel and Drum will address the following units under this plan:

1) The Furnace Area and Surrounding Soil Contamination
2) The Wastewater Treatment Facility and Surrounding Soil Contamination
3) The Ash Pile and Surrounding Soils
4) The Interiors of Buildings 1,2, & 3

Each of these units have been identified by the U.S. EPA and the NJDEP as RCRA regulated units (see Dwg. Sheet No. BB-004). The U.S. EPA has also identified other areas of environmental concern, including the incoming drum storage area, which it believes should be addressed under this closure plan. Normally, the definition of "regulated units" is broadly interpreted by the implementing agency (U.S. EPA or an Authorized State) to include areas or sources of suspected contamination at a site to ensure that the environment is properly protected. Such areas might include nonhazardous waste management units (RCRA Subtitle D units) and/or soil or ground water contamination identified on site. In the case of Bayonne Barrel and Drum, other New Jersey environmental rules and regulations apply to several areas of the site which must also be addressed in order to properly close the site. These environmental rules and regulations and their applicability to Bayonne Barrel and Drum are discussed below.

4.2 OTHER APPLICABLE N.J. ENVIRONMENTAL REGULATIONS

4.2.1 N.J. Sanitary Landfill Closure Regulations

The Bayonne Barrel and Drum's site is subject to closure as a sanitary landfill because it consists of a portion of the "15 E Sanitary Landfill". As described in section 3.2.1, this landfill was only discovered by the NJDEP in 1986 as a result of investigations conducted for the widening of the New Jersey Turnpike. As a result of that discovery, all of the current owners of the "15 E Sanitary Landfill" have, by the issuance of NJPDES Discharge to Groundwater (DGW) Permits, been required to install monitoring wells and conduct groundwater monitoring. Both Bayonne Barrel and Drum and Frank Langella have received such permits. The NJDEP is currently reviewing the closure of portions of this landfill under applicable landfill closure regulations and disruption regulations. In particular, the NJDEP is currently reviewing an application by National Amusements, Inc. to disrupt the old Newark Drive-In site on Lots 11 & 12 in Block 5002 to construct a Multiplex Cinema. This application does not propose removal of the contaminants in the landfill. Similarly the NJDEP is reviewing plans for the widening of the New Jersey Turnpike through a portion of the Bayonne Barrel and Drum property and a portion of the Newark Drive-In property. These plans also do not call for removal of the landfilled waste.

No decision has been made by the NJDEP at this time as to the closure requirements for this landfill. However, it is anticipated that the NJDEP will require similar closure at each site of the properties in order to achieve environmental control of the entire landfill as a single unit. For this reason it is Bayonne Barrel and Drum's position that the closure of the landfill underlying its facility should be subject to the closure requirements for a sanitary landfill rather than those of the RCRA Subtitle C Program.

4.2.2 N.J. Environmental Cleanup Responsibility Act

Bayonne Barrel and Drum, by virtue of its Standard Industrial Classification (SIC) Number and its management of hazardous materials and waste is subject to the N.J. Environmental Cleanup Responsibility Act Regulations (ECRA) at such time as the facility triggers ECRA. The ECRA review will encompass all areas of the property not subject to regulation under the N.J. Solid Waste Management Act (NJSA 13:1E-1 et seq.). (The N.J. Solid Waste Management Act has been found to be equivalent to RCRA Subtitle C. Accordingly, ECRA will apply to all areas not subject to closure under this Closure Plan or the Landfill Closure regulations.)

Specifically, the ECRA regulations will apply to the surface of the incoming drum storage area consistent with the New Jersey Attorney Generals opinion in the matter of Vulcan Materials, ECRA Case #84379. In addition, the closure of the remaining buildings (i.e. all buildings not decontaminated under this Closure Plan) will also be subject to ECRA review and decontamination as necessary.

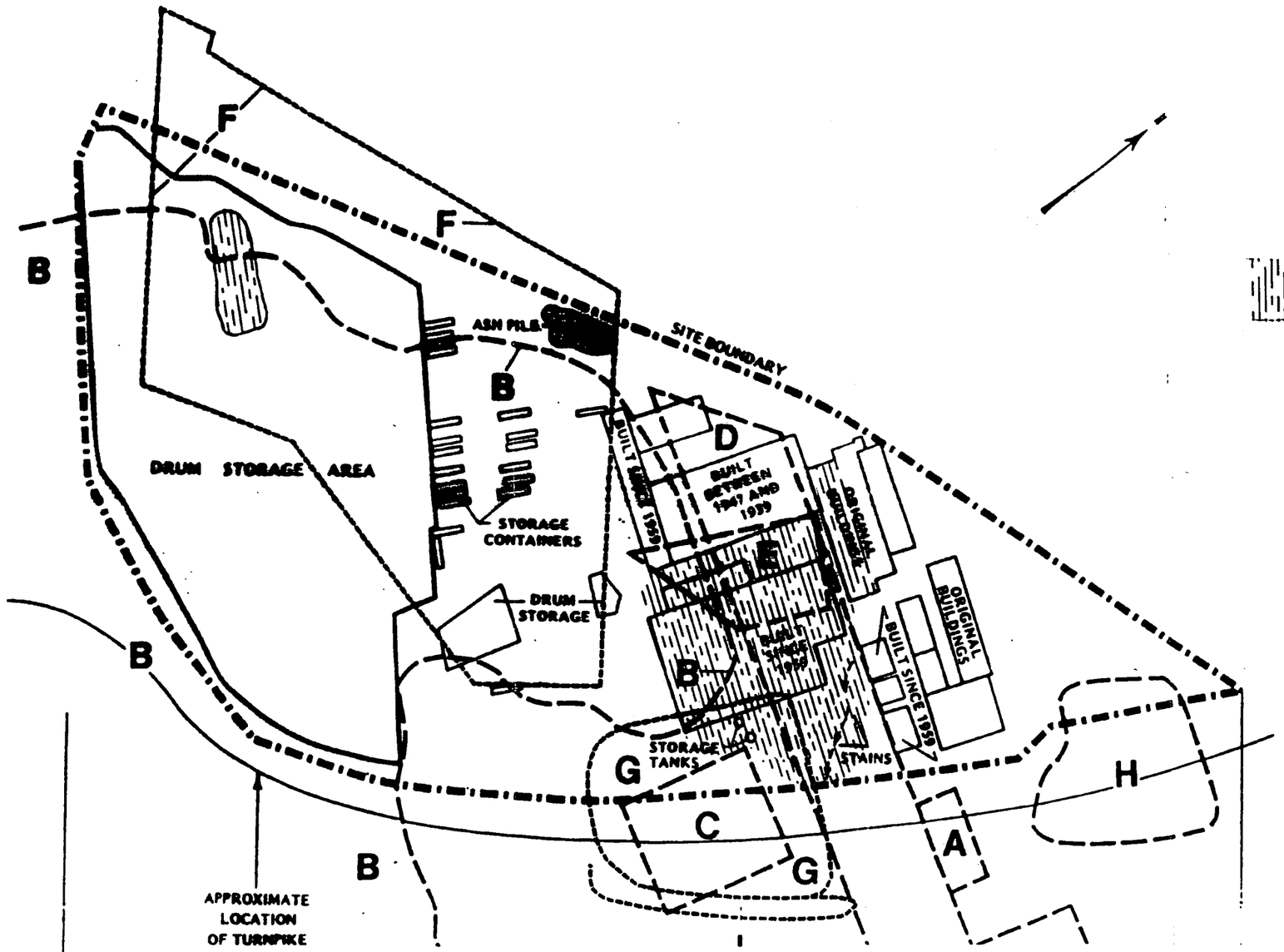
4.2.3 NJPDES Regulation

As described in Section 4.2.1 the NJDEP has issued groundwater monitoring permits to all of the owners of the properties occupied by the "15 E Sanitary Landfill" including Bayonne Barrel and Drum and Frank Langella. The landfill has been categorized by the NJDEP as a Major Industrial Discharge. This monitoring program has been developed by the NJDEP to assess the impact of the entire "15 E Sanitary Landfill", including the Bayonne Barrel and Drum Site. Because of the heterogeneous nature of landfills in general, and the demonstrated heterogeneity of the "15 E Sanitary Landfill" from studies by Wehran Engineering, Berger and Associates and Raviv, it is believed that independent ground water monitoring of the RCRA regulated units will be inconclusive as to the source of the contaminants. Accordingly, Bayonne Barrel and Drum believes that the existing NJPDES DGW Permit should be adhered to in lieu of additional groundwater monitoring at each RCRA regulated unit.

4.3 COMPREHENSIVE APPROACH TO STATE AND FEDERAL REGULATIONS

Bayonne Barrel and Drum's comprehensive approach to satisfying all state and Federal environmental regulations as described above is depicted graphically in figure 4-1 and 4-2. The key elements of the approach are as follows:

- o Close all hazardous waste management units described in section 4.1 in accordance with this plan.
- o Address the sanitary landfill underlying the facility in accordance with the requirements of the sanitary landfill closure regulations.
- o Decontaminate the remaining structures and address miscellaneous spills on the property under the ECRA regulations.
- o Perform groundwater monitoring in accordance with NJPDES DGW Permit #NJ006408.



AREA SUBJECT TO RCRA CLOSURE

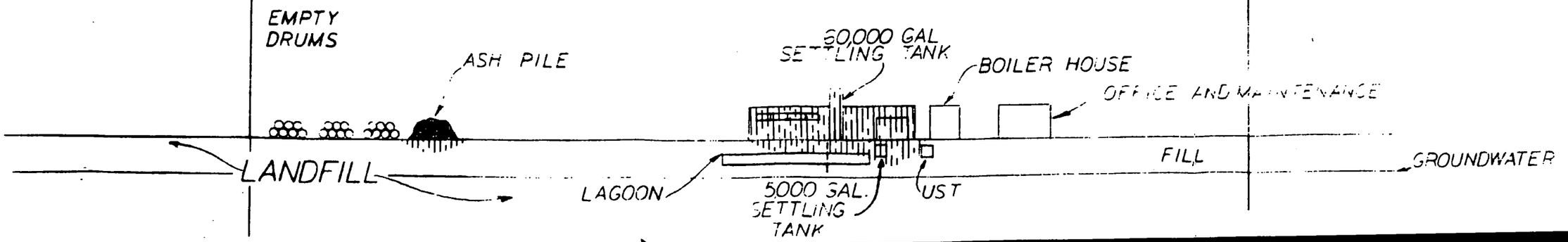
LEGEND:

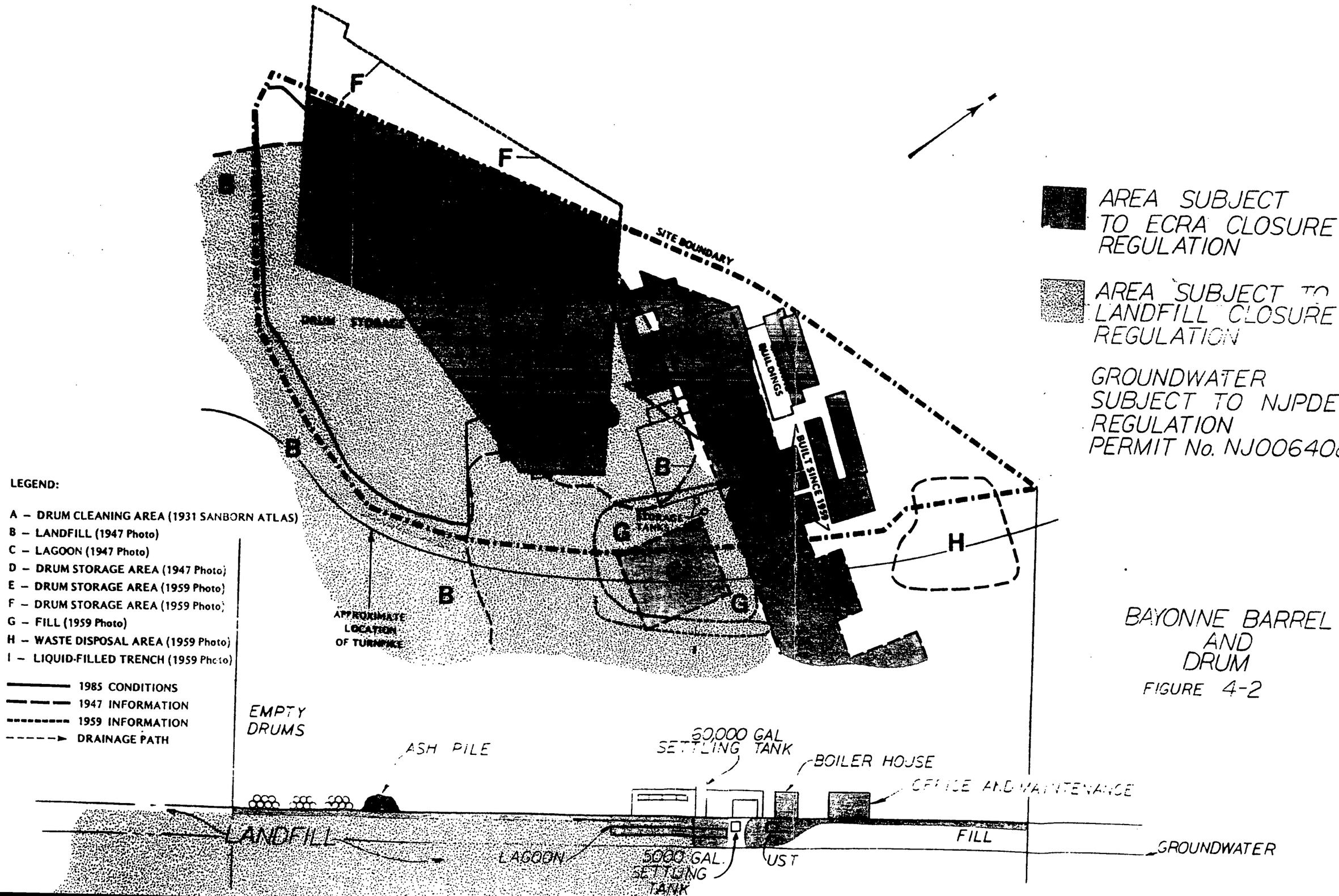
A – DRUM CLEANING AREA (1931 SANBORN ATLAS)
B – LANDFILL (1947 Photo)
C – LAGOON (1947 Photo)
D – DRUM STORAGE AREA (1947 Photo)
E – DRUM STORAGE AREA (1959 Photo)
F – DRUM STORAGE AREA (1959 Photo)
G – FILL (1959 Photo)
H – WASTE DISPOSAL AREA (1959 Photo)
I – LIQUID-FILLED TRENCH (1959 Photo)

1985 CONDITIONS
1947 INFORMATION
1959 INFORMATION
DRAINAGE PATH

BAYONNE BARREL AND DRUM

FIGURE 4-1





BAYONNE BARREL AND DRUM

FIGURE 4-2

SECTION
5

5.0 DESCRIPTION OF SOLID WASTE MANAGEMENT UNITS

Introduction

The following Solid Waste Management Units have been identified at the site:

* **Furnace Area,**
* **Ash Pile and Ash Pile Area,**
* **Building 1,2 & 3 Interiors,**
* **Water Treatment Area.**

Information concerning these SWMU's and sampling results and interpretation from prior site investigations are summarized below. Results of past sampling are also shown on Dwg No.'s BB-005A and BB-005B.

5.1. ASH PILE AND SURROUNDING SOIL

5.1.1 Description

The furnace ash pile is located in the south eastern portion of the facility and occupies an area 50 feet x 120 feet. It is approximately 4 feet in height and has a volume of approximately 890 cubic yards (see DWG. Sheet No. BB-003). Results of samples collected from ash and analyzed in 1978, 1979 & 1980 for disposal purposes indicate that the material was a RCRA characteristically hazardous waste for the presence of chromium and lead.

A 1981 New Jersey Department of Environmental Protection (NJDEP) inspection report estimated that approximately 40,000 lbs of incinerator ash and sludge were generated a month.

An NJDEP site inspection report dated 3/3/82 indicates the presence of a pile of ash within this area measuring 2'x 35'x 40' or approximately 103 cubic yards (cy). The report notes that leachate was running from the ash pile. The leachate was described as encompassing an irregular area extending approximately 150 feet downgradient from the pile. Samples collected from the waste pile (sludge) and the run-off material indicated that neither of these materials were characteristically-hazardous for metals, although the sludge was found to be ignitable (sample # TD074). Halogenated organics compounds were detected in the sludge and the leachate (3,450 and 2,579 ppm, respectively).

It is currently unknown whether the sludge sampled by the NJDEP in 1982 is represented within the current ash pile. Therefore, additional sampling will be required for proper classification.

5.1.2 Nature of Contaminants

5.1.2.a Ash Pile

Analysis for PCB's was conducted on samples collected by Raviv in January 1985 from the ash material (BBD1 through BBD9). One composite sample (BBD10) was analyzed for EP Toxic metals. Composite sample BBD10 was not found to be EP Toxic during the Raviv sampling. PCB's were detected in concentrations up to 17 ppm in three locations (BBD1, BBD5 and BBD9). Additional analytical parameters including volatile and semi-volatile organics, total metals, etc. reported in the Raviv report (1986), were collected in October 1985 from soil adjacent to the ash pile (BBD4 through BBD7 and BBDC4).

The ash pile was also sampled by the U.S. EPA during February 1984. Three composite samples were collected during this sampling event (sample #s 65184, 65185 & 65186) and were analyzed for EP Toxic metals, pesticides and herbicides, semi-volatile and volatile priority pollutants and total metals. Results of two of the samples indicate that the ash is EP Toxic for lead and cadmium. Purgeable semi-volatile and volatile organics were detected in the material also. U.S. EPA samples of ash were not analyzed for PCB's.

Based upon these sample results, ash would not be regulated by the Toxic Substance Control Act since PCB concentrations are below 50 ppm. Therefore, PCB's detected in adjacent soil could not have been derived from the ash pile run-off. Furthermore, unless subsequent sampling, performed as indicated in section 6.1.1.a of this plan, indicates that PCB's are present in the ash in concentrations greater than 50 ppm, ash will not be considered a TSCA regulated material, as defined in 40 CFR 761.

5.1.2.b Surrounding Soil

Results of soil sampling conducted by Raviv in 1986 surrounding the ash pile generally indicate increasing PHC contamination with increasing depths suggesting a source of contamination other than the ash pile. This trend deviates

in only one sample location south of the pile where surface contamination is pronounced. Surface soil contamination was also noted during composite sampling performed by the U.S. EPA in 1984. Results of Raviv sampling are similar to the EPA sampling in this area indicating contamination from PHC's, semi-volatile and volatile organics and metals. Although significant concentrations of total metals were identified by Raviv (Sample No. BBD4), soils in this area were not found to be EP Toxic for metals by the U.S. EPA.

Results of soil sample BBD14 collected adjacent to the west side of the ash pile by Raviv indicate the presence of PCB's at a level of 65 ppm. Results from the U.S. EPA composite soil sample 65187 collected from around the ash pile similarly indicate concentrations of PCBs above 50 ppm. As previously indicated, PCB contamination identified around the ash pile appears to have pre-existed the piling of ash at this location.

5.2 FURNACE AREA

5.2.1 Introduction

The furnace area is situated in approximately the center of the facility between the closed head and open head drum reconditioning buildings (Bldg's 1, 3 & 4, see DWG Sheet No. BB-003). The furnace area consists of a 2,200 square foot, one (1) story concrete block building and a conveyor fed furnace which was fired with natural gas. The furnace is approximately ten feet wide by eighty feet long. RCRA empty drums were conveyed to the concrete receiving building where they were placed onto a separate conveyor entering the furnace. After the drums exited the furnace they were washed and cooled with a spray bath. Discharge waters from this process were collected in two (2) tanks and a trough located adjacent to the furnace and directed via underground pipes to the south end of the water separator for treatment. The two underground storage tanks situated at the end of the furnace were also used to temporarily contain wash residues.

5.2.2 Nature of Contaminants

Residual ash from the cleaning of drums is evident throughout the area of the furnace and therefore remedial activities to remove this material will be undertaken. In addition, floor sweepings and other drummed materials generated from cleanup of the interior of the remaining site

buildings are currently stored within the one story building. These materials will be sampled as described in section 6.1.4 of this plan and disposed of in accordance with current regulations.

In addition to the ash material in this area, solidified paints and/or other resinous materials are present. These materials predominate the surface area in the location of the feed end of the furnace. Although these solidified materials may not be characteristically hazardous, their presence suggests that organic contaminants may be present within this area.

Past results of samples collected by Raviv in 1985 indicate that a wide array of organic and inorganic contamination has occurred in the furnace area. Only three (3) locations (BBD17 through BBD19) within this area have been sampled to date and therefore additional sampling will have to be undertaken prior to the excavation and disposal of contaminants. No sampling was conducted within this area by Berger during the NJ Turnpike proposed ROW sampling as this area was beyond the proposed ROW.

Results of Raviv sample BBD18, reportedly collected from a depth of one (1) foot adjacent to the feed end of the furnace, indicate that contamination has occurred in this area. Petroleum hydrocarbons were found at concentrations of 16,300 ppm and PCBs were found at 320 ppm.

Results from sample BBD17, reportedly collected adjacent to the west underground storage tank at the output end of the furnace also indicates that contamination has occurred in this area. Samples were collected from three intervals; surface, zero to one (0-1') foot and five to seven (5-7') feet. The surface sample was analyzed for PHC's, PCB's and volatile organics (VOC). Based upon current site conditions, this sample presumably represents ash and solidified organic material in this area. Results indicated PHC's at 16,000 ppm, PCB's at a concentration of 28 ppm and VOC's at 22 ppm. Results of the first one foot sample increment indicates contamination from PHCs (9,210 ppm), base neutral extractables (51 ppm), phenol (20 ppm) and volatile organics (11.5 ppm). This sample was also subject to analysis for dioxin. Results were non-detected at a detection level of 0.32 ppb.

Results from the five to seven (5-7') foot sample increment, assumed to be groundwater elevation, indicate PHC

contamination of 20,800 ppm.

Results from sample BBD19, reportedly collected from the alley northeast of the furnace outlet between the closed head reconditioning building and the building north of the furnace (Building No.3), indicate substantially less contamination than that reported for the other samples collected within the furnace area. Samples were collected from three (3) intervals; zero to one (0-1'), one to two (1-2') feet and two to three (2-3') feet below the surface. Petroleum hydrocarbons and PCB's were detected in the first two sample increments at levels of 4,330 ppm PHC and 37 ppm PCB, and 1,700 ppm PHC and 32 ppm PCB respectively. Results of the sample collected at the third and final increment (2-3') indicate PHC contamination at a concentration of 130 ppm. No PCB's were detected at this sample increment. The first sample increment (0-1') was also analyzed for volatile organics which was reported to be non-detected.

Results of a surface soil sample (65192) collected by the U.S. EPA during their investigation in February 1984 and analyzed for EP Toxic metal and pesticides/herbicides, semi-volatile and volatile organics, and total priority pollutant metals indicates the presence of total metals and semi-volatile organics above NJDEP recommended guidance values. Volatile organics appear to have been non-detected. Additionally, the soil was not found to be leachable for metals based upon results of analysis for EP Toxicity.

5.3 WASTE WATER SEPARATOR AREA

5.3.1 Introduction

The water separator area is located east of and adjacent to building No.1, the closed head drum reconditioning building. Waste waters and oil generated during the cleaning and reconditioning of closed head and open head drums were discharged to this area for treatment. Liquid wastes from the cleaning of closed head drums were directed from building No.1 to the separator trench. Oil and water collected in the trough and tanks located in the furnace area were also directed to the trench. Primary treatment in this area included the physical separation of organics, water and solids. Waste water was separated initially in the trench and 5,000 gallon underground settling tank. Thereafter the water was pumped to the above ground 60,000 gallon storage tank for final separation. The remaining two storage tanks were never used due to the cessation of operations. Effluent water was discharged to the Passaic

Valley Sewer Authority under permit after treatment.

5.3.2 Nature of Contaminants

Past sampling activities in the waste water treatment area have included the collection of samples by the NJDEP (1982), the U.S. EPA (1984), Raviv (1985) and Berger (1985). Samples collected by the NJDEP and U.S. EPA were predominantly representative of waste materials, although some environmental soil samples were analyzed by the NJDEP. Samples collected by Raviv and Berger were predominantly representative of the environment.

Samples were collected from the waste water treatment system by the NJDEP in January and March 1982 while the site was operating. Results from aqueous material in the 5,000 gallon underground tank (sample No. TD064) indicate that waste waters had concentrations of chromium.

Results of sampling by Raviv indicate substantial contamination in the waste water treatment area from the surface elevation to approximately groundwater elevation (5-7 feet). Surface contaminants identified by Raviv included PHC's in concentrations ranging from 5,920 ppm to 23,700 ppm (BBDS1 & BBDC3) and PCB's at 130 ppm (BBDS1).

Sample BBD16, collected from the 1 to 2 foot interval, was the only discrete sample collected from this interval in the water separator area. This sample indicated elevated levels of PHC's and PCB's (20,800 ppm and 213 ppm respectively). Priority Pollutant Volatile Organics (VOC's) were detected at 1.8 ppm in this sample location as well. A composite sample collected from 5 to 10 feet below the surface in this location had dramatically lower levels of these constituents indicating a reduction in the vertical migration of contaminants, presumably from the interception of these materials by groundwater.

Soil samples collected at the 5 to 7 foot interval from location BBDC3 (finished as a monitor well) had elevated levels of PHC's and PCB's (59,000 ppm and 141 ppm respectively). Priority Pollutant's VOC's were also detected at 6.3 ppm. Based upon these results, it appears that petroleum related contamination may have originated from a below ground source or be related to prior land use practices.

Reports for the Berger samples (M1188 and M1189) located

within the area were similar in the physical description of general petroleum contamination. However, the Berger samples collected from 0 to 1.5 feet indicated substantially lower levels of VOC's (0.22 ppm and 0.002 ppm respectively). Likewise, the Berger Results from this interval were non-detected for PCB's with a detection level of 15 ppm. Although these results are from different specific locations, they are relatively close and therefore suggest that contamination is either not far reaching or may be from non-specific contamination in the fill material. Results of Berger sample No. M1198, collected from 0 to 1.5 feet below the surface and topographically downgradient of the separator area, indicate substantially lower levels of contamination than those collected adjacent to the separator.

5.4 BUILDING INTERIORS

5.4.1 Introduction

Based upon current knowledge and understanding of the site operations, hazardous wastes were not stored in the buildings during the operating period of the facility and may not have been generated in all of them. Characteristically hazardous ash has been identified as being generated in the furnace area and PCB's in excess of 50 ppm have been identified within surface soil in this area. Therefore adjacent buildings (No.s 1,2 & 3) could have been contaminated with leachable metals and/or PCB's through site traffic. Results of sampling conducted by the U.S.EPA in 1988 indicates that contaminants exist within areas of Building No.3 and the waste in Building No.2.

5.4.2 Nature of Contaminants

Building interiors are currently in a broom swept condition with the exception of Building No.2. The only visible areas of the buildup of debris is located in the floor troughs in building No.1. The interior troughs of building No.1 will be sampled since it is not known if waste waters and sediments generated during the cleaning of drums would be considered characteristically hazardous. Prior sampling results reported by Raviv indicate the presence of base neutral extractables and low level pesticides within these troughs.

As previously described, RCRA hazardous wastes resulting from the cleanup of building interiors are currently stored in a waste pile in Building No.2, the furnace area building, making the closure of that building interior subject to the closure of waste pile(s). In addition, drums containing ash, debris and waste oil/sludge from the clean-out of the waste water facilities are stored in Building No.2, making this building also subject to the closure of containers.

Results of samples collected from soil in the interior of Building No.3 by the U.S.EPA in 1988 indicate that ash/soil containing high levels of metals is present within this area.

5.5 DEMONSTRATION OF COMPLIANCE

This closure plan has been prepared in accordance with 40 CFR 265 et seq. for the areas applicable to the closure requirements. Specific information, as described in the interim status (265) Closure/Post-Closure Plan Checklist.

A-1 Closure Plan Requirements

A-1a Closure Performance Standard - see Section 6.0.1

A-1b Partial Closure Activities - Not Applicable

A-1c Maximum Waste - Approximately 1,630 cubic yards of ash is currently stored in a pile located in the southwest portion of the site. Approximately 65 cubic yards of ash and debris from the cleanup of the buildings is stored in a pile in building No.2. An estimated 350 drums of solid waste, consisting of floor sweepings, debris and ash are also stored within building No.2. Although a specific inventory of drum contents has not been conducted, a portion of these drums are reported to contain waste oil/sludge generated during the cleaning of the waste water treatment tanks. An estimated 400 cy of ash is estimated to be on the surface of the furnace area. Based on information contained in U.S.EPA and NJDEP inspection reports, approximately 40,000 pounds (lbs) of ash was generated monthly during the active operations of this facility.

A-1d Inventory Removal, Disposal or Decontamination of Equipment -

All equipment previously used in the operations of this facility which were housed within the buildings have been removed. Specifications for the removal and disposal of current waste inventory are provided in Sections 6 and 7 of this closure plan.

A-1d(1) Closure of Containers - The container storage area subject to this plan is located in building No.2. Specific information concerning the closure of this area is provided in Section 6.1.4 of this plan, re. Phase I Remediation.

A-1d(2) Closure of Tanks - The closure of tanks involves two (2) underground collection tanks located in the furnace area and their associated separation trenches and piping, and one (1) 5,000 gallon underground tank and

one (1) 60,000 gallon above ground settling tank and their associated separator trench and piping. Removal of wastes from these tanks is described in Section 6.1 of this plan. Tank removal and the removal of soil contamination are discussed in Section 6.3 of this plan.

A-1d(3) Closure of Waste Piles - Closure of the waste pile(s) includes the closure of the ash pile located in the southwest corner of the site and the waste pile located in Building No.2. Closure will be conducted in accordance with federal regulation since waste piles are not allowed in the state of New Jersey. Waste piles subject to this closure plan consist of ash stored in the southeast portion of the site and ash and debris stored on the floor of building No.2 (Sections 6.1.1 and 6.1.4 respectively). Remediation of areas subject to potential leachate run-on are discussed in Sections 6.1.2 and 6.1.4.c.

A-1d(4) through A-1e(8) - Not Applicable

A-1f Schedule for Closure - A Schedule for Closure is provided in Appendix J of this plan.

A-1g Extensions for closure time - Not applicable at this time.

A-1h Certification for Closure - A Certification for Closure will be provided upon project completion.

A-2 Post-Closure Plan Requirements - A post-closure plan is not required at this site per the U.S.EPA Consent Agreement with Bayonne Barrel and Drum, September 3, 1984 (Section 11.B.).

A-3 Closure Cost Estimate - A Closure Cost Estimate is provided in Appendix I.

SECTION
6

6.0 REMEDIAL ACTION PLAN

Introduction

This Closure and Remedial Action Plan has been designed to control, minimize or eliminate the escape of environmental contaminants and hazardous substances identified at the site, which are related to the generation and storage of hazardous wastes from the drum reconditioning operations, and minimize the need for future maintenance in accordance with 40 CFR 265.111. This plan addresses Solid Waste Management Units (SWMU's) used to store RCRA hazardous wastes in excess of 90 days.

Based upon the lack of conclusive documentation concerning the extent of horizontal and vertical contamination, the estimated physical extent of remediation required at this site, and the interfering land use practices employed at this site prior to the complete development of the drum reconditioning facility, this remedial action plan will be conducted in three distinct and separate phases. The plan identifies the steps and provides a description of how each hazardous waste management unit at the facility unit will be closed in accordance with 40 CFR 265.112(b)1. SWMUs to be closed include:

A-1d(1) Closure of Containers - Containers stored in Building No.2;

A-1d(2) Closure of Tanks - Closure of two (2) settling tanks, associated trench and piping located in the Furnace Area, and closure of one (1) trench, one (1) 5,000 gallon underground settling tank, one (1) 60,000 gallon above ground settling tank and associated piping located in the waste water treatment area;

A-1d(3) Closure of Waste Piles - Closure of waste piles including approximately 890 cubic yards of ash currently stored in the southeastern portion of the site and approximately 65 cubic yards of ash and debris currently stored in building No.2.

Additional areas not identified as a solid waste management units, but which are subject to this closure as described in Sections 4 & 5 of this plan, include the interiors of Building No.s' 1 & 3, and the excavation of soils.

Phase I will include the sampling and removal, in accordance with 40 CFR 265.351 of RCRA hazardous waste ash currently staged on the site as well as potentially non-hazardous RCRA waste ash. This will include the sampling, analysis and off-site disposal of the following materials:

* Ash Pile;
* Ash located in the subsurface tanks, trough and on the surface of the furnace area;
* Floor Sweepings and drums stored in Building No.2;
* Liquids and Sludges in the Oil/water Separator;
* Sediment in troughs of Building No.1;
* Soil/Ash area in Building No.3.

Phase I will also include the decontamination of the furnace and the floors of Building No.s' 1, 2 & 3. Upon completion of the decontamination of the furnace, it will be demolished and disposed of off site.

Phase II of this plan will call for the implementation of a site sampling plan to address the horizontal extent of contamination above the groundwater elevation in the following areas:

* Furnace Area;
* Waste Water Separator Area.

Prior to the initiation of on-site soil sampling conducted during this phase, a landfill disruption permit will be obtained from the NJDEP, Division of Solid Waste Management. Sampling will be conducted at the locations described in Section 6.2 of this plan.

Upon receipt of the analytical results of Phase II sampling, area specific plan and profile drawings will be prepared to graphically indicate the extent of contamination, as defined in Section 6.0.1 of this plan, if applicable. Reporting will include a written interpretation of the data and summary conclusions with interpretation of potentially interfering factors.

Phase III of this plan will include the remediation of contaminated soils above the water table as defined in Section 6.0.1 of this plan. Soils will be excavated, staged and disposed of as described in Section 6.3 of this plan. The extent of soil remediation will be determined by the extent of contamination found to exist above the cleanup standard within on-site soil in the areas of SWMU's.

6.0.1 Remedial Action Cleanup Standard

6.0.1.a Background and Basis

Land-use practices undertaken on the BB&D site prior to the construction and operation of the drum reconditioning facility are considered to have had significant impacts upon the environmental quality of the land. As described in Section 3.0 of this plan, these land-use practices included the operation of the 15E Sanitary Landfill, classified by the NJDEP as Comm./Ind. (Commercial/Industrial). Results of sampling undertaken within the confines of the 15E landfill at the Newark Drive-In location, which is adjacent to the BB&D site, indicate that substantial contamination exists within the fill material.

Soil and groundwater sampling was conducted at the Newark Drive-In Site and reported to the NJDEP Bureau of Solid Waste Management in 1988 by Wehran Engineering Corporation (WEC) under a work plan approved by the NJDEP Division of Water Resources, Bureau of Ground Water Quality Management. The investigation was conducted pursuant to a Landfill Disruption Permit Investigation and NJPDES Well Installation.

Soil samples were collected from test pits. The test pit logs contain soil descriptions including ash, debris and apparent coal tar.

Significant concentrations of inorganic and organic compounds were detected within the fill of the 15E Sanitary Landfill under the Newark Drive-in Site. Specifically, elevated metals were detected as follows; arsenic 198 ppm, barium 1,450 ppm, chromium 1,420 ppm, lead 15,400 ppm, mercury 28.3 ppm, and zinc 2,180 ppm. Cyanides were detected at levels up to 22.6 ppm. Petroleum hydrocarbons were detected in concentrations up to 2,970 ppm.

Pesticides, Delta BHC and Endosulfan 1, were detected in most soil samples. Results of sample TP-04 exhibited concentrations of 4,4'DDT at 9.2 ppm, 4,4'DDD at 68 ppm and 4,4'DDE at 3.5 ppm. PCB's were detected in only one sample at a level of 1.6 ppm. Total Base Neutral Extractable Organics were detected at levels up to 3% (percent), 3,000 times higher than the NJDEP action level. Base Neutral Extractables were represented primarily by polycyclic aromatic hydrocarbons (PAH's). Total volatile organics were

identified at concentrations up to 413 ppm.

6.01.b Closure Performance Standard

Preliminary investigations undertaken at adjacent, off-site locations in the reported confines of the 15E Sanitary Landfill indicate substantial contamination from it's operation. Based upon these results and other land-uses reported for the site, performance standards for this closure can not meet current NJDEP recommended action levels. Rather, closure standards are designed to take into consideration the background conditions, i.e., the "15E Sanitary Landfill" (see Table 3-1).

Although specific analytical results are available for areas of the landfill not within the boundary of the BB&D site, landfilled material from the operation of the 15E landfill can not be considered homogeneous and direct extrapolations of background quality can not be made. Specific regulatory cleanup standards other than those proposed herein may be applicable during site remediation under other regulatory programs as described in Setion 4.0 of this Plan.

6.1 PHASE I

Phase I of this remedial action plan will focus on the sampling, removal and disposal of hazardous wastes currently on the site. This phase will also include the sampling of other solid wastes currently on the site in preparation for disposal.

Sediments and solid waste within the furnace area tanks, trough and on the soil will be sampled for disposal purposes. In addition, floor sweepings and materials generated during the past cleanup of adjacent buildings, currently stored in Building No.2, will be sampled. Oil, water and sediments generated during the clean-out of the waste water treatment tanks during previous work conducted by others will also be sampled for disposal purposes.

Since it is currently not known whether processes involved with the cleaning of closed head drums in Building No.1 generated hazardous wastes, sediments remaining in the building's waste collection troughs and sediments within tanks and separator trenches in the water separator will be sampled for RCRA characteristics.

Soil/ash not covered by concrete in Building No.3 will also be sampled for RCRA characteristics during this phase.

6.1.1 Ash Pile

Prior to disposal, ash will be sampled in accordance with those methods stipulated in section 8.0 of this plan. Based upon the information currently available, ash piled in the western corner of the site is EP Toxic for lead and cadmium and therefore will be disposed of as a characteristically hazardous RCRA waste. Although the ash has been found to contain PCB's at concentrations less than 50 ppm, soils underlying the ash have been shown to contain total PCB's in excess of 50 ppm (Aroclor 1248 at 67 ppm and Aroclor 1254 at 117 ppm, U.S. EPA 1984 sample No. 6517). Since ash overlies soil with higher concentrations of PCB's, it is apparent that PCB contamination to soil could not have resulted from the ash. Therefore, ash will not be handled in accordance with TSCA Compliance Program Policy No. 6-PCB-3 and disposed of as TSCA hazardous unless subsequent sampling for PCB's undertaken during this sampling event show concentrations within the ash to be in excess of 50 ppm.

Volatile organics have been detected in the ash pile at concentrations up to 418 ppm, and the potential exists that halogenated organic compounds (HOC's) exist at concentrations sufficient to make the ash a California List Land Ban material (40 CFR 268.32(e)2). In addition, semi-volatile organics have been detected in the ash at significant concentrations. Therefore, sampling directed at evaluating the total concentrations of HOC's as described below will be undertaken prior to off-site disposal. Upon completion of the sampling, the ash pile will be covered with six mil polyethylene plastic weighted down with materials sufficient to ensure that the plastic remains in place.

6.1.1.a Ash Pile - Sampling & Analysis

Ash material currently in the area referred to as the ash pile will be sampled at a frequency of one (1) sample per each 500 cubic yards (cy) and analyzed for RCRA characteristics. Although composite samples, consisting of five (5) samples per 100 cy, are generally requested by the NJDEP, this policy will not be adhered to since data already gathered indicates that this material is primarily a RCRA hazardous waste for the presence of metals.

Based upon the occurrence of PCB's in the soils underlying the ash, a stratified grid sampling method will be employed to fully assess the potential for PCB's in the ash. A total of 36 discrete samples will be collected from the ash at two depths on a 20' grid. Samples will be collected from the 0.5 - 1.0 foot increment and the 2.0 - 2.5 foot increment. All samples will be analyzed for total PCB's.

In addition to analysis for RCRA characteristics and PCB's, nine (9) samples will be collected from quadrants determined by the physical size of the pile for analysis of volatile organics. Samples will be collected from a minimum depth of 1.5 feet to positively bias VOC concentrations. Samples will be analyzed for Volatile organics using current GC/MS methods. Samples will be collected, handled and analyzed in accordance with the site Quality Assurance/Quality Control Plan (QA/QC) set forth in section 8.0 of this plan.

6.1.1.b Ash Pile Removal and Disposal

Upon receipt of analytical results from the laboratory and approval for the disposal of ash into an appropriate disposal facility, ash material will be loaded into dump trailers and transported off-site for disposal.

The ash material is currently in a solid state, and the potential for wind dispersal during loading is presumed to be low. In order to minimize the potential for the spread of ash material during loading the following procedures will be undertaken:

1. Six (6) mil polyethylene plastic will be placed adjacent to the pile prior to loading. Plastic will be replaced as necessary during loading to minimize the potential of ash dispersal;

2. Truck trailers will be positioned over the plastic covered loading area during loading operations;

3. The side of the dump trailer exposed to the loader will be covered with plastic prior to loading;

4. Upon completion of loading operations, trucks will be dry brushed of any ash material which may have contacted the outside of the truck trailer or wheels;

5. Trucks will proceed to the decontamination pad prior to leaving the site (see section 7.0):

Upon completion of the ash removal, the surface of the area will be sampled in six (6) locations and analyzed for EP Toxic metals PCB's and VOC's. Upon completion of sampling, the area will be covered with 6 Mil polyethylene plastic until remediation of soil is completed. Additional remediation proposed for contaminated soil in this area is described in section 6.1.2 of this plan.

6.1.2 Ash Pile Surrounding Soil

Soil surrounding the ash pile area is reported to contain levels of PHC's, semi-volatile and volatile organics, total metals, and PCB's above NJDEP recommended cleanup values. As previously discussed, prior site activities including that of the Newark Landfill have substantially contributed to the contaminants identified at this and adjacent sites (Berger 1986, Wehran 1988). As evident from the vertical extent of PHC and volatile organic contamination at the site in areas of non-operations, past land uses may have also included disposal of solid wastes contaminated with these constituents (Berger 1986).

Based upon this information, the regional occurrence of greater concentrations of contamination below the surface than at the surface as previously described (section 5.2.1.b and Raviv 1986) and the results of post-ash removal sampling described above, soil under the ash pile will be remediated, if necessary[1], only for the presence of VOC's and EP Toxic metals based on a comparison of soils underlying the landfill and PCB's in concentrations greater than 50 ppm. Rational for this position stems from the following facts: VOCs and EP Toxic metals have been detected in previous sampling of the ash by the NJDEP, U.S. EPA and Raviv. PCB's have not been found in the ash at levels above 50 ppm.

Based upon the array of potential parameters which may be detected within the municipal ash disposed in this area of the Newark landfill, soil post-excavation sampling is not proposed for parameters other than VOC's and EP Toxic metals since contamination from the two sources may be indistinguishable. Results of post-excavation samples will be evaluated as described above. Samples will also be analyzed for PCB content to determine the extent of contamination above 50 ppm.

---

[1] **see Section 4.0 for background and basis on contaminant levels and past land-use impacts**

6.1.3 Furnace Area

Ash material currently on the ground, in the underground collection tanks and within the trough in the furnace area will be prepared for disposal as described herein. Ash on the surface of the ground is estimated to be less than 400 cy in total volume; however it is difficult to discern the demarkation between the ash and contaminated soil. Therefore, one (1) composite sample will be collected from material suspected to be ash for analysis. In addition, a composite sample will be collected from each of the two underground open collection tanks and the trough which extends parallel to the furnace and is presumed to contain ash. Samples will be analyzed for the eight (8) EP Toxic metals, EP Toxic herbicides and pesticides, PHC's, PCB's, Ignitability, Corrosivity, Reactivity. Other parameters may be required based upon specifications of the chosen disposal facility(s).

Based upon the analytical results of samples collected during this phase, these materials will be excavated and disposed of before Phase II soil sampling, if they are found to be characteristically RCRA hazardous, or during the Phase III soil removal if they are not found to be hazardous.

6.1.3.a Furnace

Although specific information concerning the residual materials contained in the RCRA empty drums cleaned in this furnace is unavailable, these materials were reported to be from paints, vegetable and petroleum oils and other characteristically non-hazardous and hazardous wastes. Based upon the nature of these materials and that of the drums themselves, metals may be present on the interior and exterior walls of the furnace and associated stack. Therefore, the entire furnace will be decontaminated as described below. Thereafter, the furnace will be demolished and disposed of off-site. Deviations from this plan may be required based upon conditions encountered in the field.

1. Openings to the existing underground storage tanks utilized to collect wash waters at the output end of the furnace will be covered with 1/2 inch thick plywood sheets to eliminate the potential for injury to personnel. Plywood will be marked appropriately with orange paint or a similar bold

marking to warn personnel of the underlying structure.

2. The ground surface within twenty (20) feet of the furnace will be completely covered with six (6) mil polyethylene plastic (poly) to minimize additional impacts to the soil and groundwater. Continuous rolls will be used where possible. Seams where sheets of poly meet will be overlapped a minimum of one (1) foot and joined with an appropriate tape. Seams are to be continuously sealed with no apparent gaps.

3. Artificial berms, constructed of 4" by 4" wooden beams or similar, will be placed under the perimeter of the poly to divert water spray toward any natural low points where decontamination waters can be recovered for disposal. Under no circumstances will disturbances of the existing soil be made to create berms or other water collection structures due to the presence of contamination known to exist therein.

4. The interior and exterior of the furnace will be decontaminated using a low volume high pressure water spray. Wash waters will be prepared with a mild soap solution.

5. Any significant areas of buildup of residual material will be removed using wire brushes and scrapers where possible.

6. Water and solids generated during the washing procedure will be directed to any evident low points in the artificial containment area and collected via a vacuum or pump and placed in appropriate DOT shipping containers. Solids generated will be collected and placed in containers as well. Samples will be collected of rinse waters for disposal purposes and disposed of in accordance with state and federal regulations or discharged to the sanitary sewer under permit.

7. Upon completion of the decontamination process, used polyethylene sheeting will be placed in containers for disposal.

Upon completion of the decontamination procedures,

samples will be collected from the interior and exterior of the structure. A total of six (6) chip tests or similar will collected and analyzed for EP Toxic metals (8) and PCBs.

6.1.3.b Furnace Demolition

Upon receipt of analytical results from chip tests referenced in section 6.1.3.a and approval of the structural material(s) into an appropriate land disposal/recycling facility, the furnace will be demolished and loaded into trucks for off-site disposal. Scrap metal and/or other reclaimable debris will be recycled where possible. All materials removed for recycling and not manifested as a regulated material will be accompanied with a Straight-Bill-Of-Lading for tracking purposes.

6.1.4 Building No. 2 Interior and Waste Materials

As previously indicated, floor sweepings from the cleanup of adjacent buildings are piled within the one story building (Bldg No.2) located within the furnace area. Based upon measurements taken in the field, there are approximately 65 cy of material in this pile. In addition, approximately 350 drums of solid debris from floor sweeping and liquids, reportedly generated during the cleaning of the water separator tank and trench, are also situated in the building. These materials will be sampled prior to removal from the site as described below.

6.1.4.a Debris Pile Sampling

Debris currently piled within Bldg No. 2 was reportedly generated from the sweeping of site buildings and has an estimated volume of 65 cy. Solidified paint is also noted on the surface of this pile and, therefore, sampling for disposal will include an evaluation for volatile organics.

One (1) composite sample, made up of five (5) discrete samples, will be collected from the debris and analyzed for EP Toxic Metals, herbicides and pesticides, PCB's, PHC's, corrosivity and reactivity.

6.1.4.b Drum Sampling and Consolidation

Drums containing solid waste will be segregated from

those containing any liquid wastes within Building No.2. Thereafter, drum contents will be physically and chemically compared prior to commencing further activities as described below.

SOLID WASTE

All drums and samples will be marked with corresponding sample numbers and handled in accordance with the site QA/QC plan. Individual samples will be initially screened for; reactivity, corrosivity, and physical appearance. Thereafter, similar samples will be composited in the laboratory at a frequency of approximately one composite per ten (10) drums. Composite samples will be analyzed for the eight (8) EP Toxic metals, EP Toxic herbicides and pesticides and PCB's. Drums found to contain characteristically hazardous RCRA wastes may be subject to additional analyses for HOC's.

Based upon the analytical results of samples, drums containing similar wastes will be combined in a 20 cy roll-off container staged immediately outside of the south end of Building No.2 in preparation for sampling and analysis. Upon completion of consolidation, the roll-off container will be temporarily moved to within Building No.4 to protect it from the environment.

LIQUID WASTE

Liquid wastes and sludges in drums which have been segregated as described above, will be sampled for analysis as described herein. Any drums found to be leaking will be over-packed prior to staging for waste sample collection. Samples will be collected with a Composite Liquid Waste Sampler (Coliwasa) or equivalent and placed in separate sample bottles as described in section 8.0 of this plan. All drums and samples will be marked with corresponding sample numbers and handled in accordance with the site QA/QC plan.

Individual samples will be initially screened for; reactivity, corrosivity, ignitability, and physical appearance. Similar samples will be composited by the laboratory at a frequency of approximately one composite per ten (10) drums. Composite samples will be analyzed for the eight (8) EP Toxic metals, EP Toxic herbicides and pesticides and PCB's. Additional analyses including BTU's, VOC's, etc. may be conducted based upon the requirements of specific disposal facilities.

Hazardous wastes in drums which do not meet DOT specifications or can not be properly secured will be over-packed in DOT approved containers.

Upon approval from a permitted Treatment, Storage and Disposal Facility (TSD), materials will be prepared for off-site disposal and shipped to the appropriate facility in accordance with state and federal regulations.

6.1.4.c Building No.2 Interior

Upon removal of the waste materials currently within Building No.2, the interior of Building No.2 will be decontaminated as follows:

1. All windows of Building No.2 will be closed and sealed. In situations where glass has been broken out of windows, 4 mil polyethylene plastic will be placed over the open area.

2. Sandbags or a similar diking material will be placed at the interior of doorways or other routes to the environment prior to cleaning operations. Any floor drains noted upon completion of removal of solid wastes referenced above will be temporarily closed with rubber or wooded plugs and sealed with an appropriate caulking material.

3. The interior of Building No.2 will be decontaminated using a low volume high pressure water spray. Wash waters will be prepared with a mild soap solution.
4. Water generated during the washing procedure will be squeegeed to any evident low points in the floor and collected via a vacuum or pump and placed in appropriate DOT shipping containers. Wash waters generated during the decontamination of the above-referenced structures will be containerized and disposed of in accordance with current regulations or discharged to the sanitary sewer under permit.

Upon completion of the cleaning, the interior of the building will be wipe sampled as described in Section 8.0 of this plan. Analytical parameters will be based upon the types of materials identified during the Phase I waste sampling and those contaminants which could potentially remain after this cleaning operation.

6.1.5 Building No.1

Operations within Building No.1 included the washing of RCRA empty drums which may have generated RCRA hazardous wastes. Since it is presently not known whether hazardous wastes were generated in this building, sediments remaining in the

liquid collection troughs will be sampled for RCRA characteristics for this evaluation. Upon receipt of the analytical results, sediments and solid waste in the troughs will be removed and staged for disposal. The troughs will be decontaminated as described below.

6.1.5.a Sampling

Three (3) composite samples will be collected from sediments within the troughs of the building floors. Samples will be composited in the field by volume as described in section 8.0 of this plan. Samples will be analyzed for the eight (8) EP Toxic metals, EP Toxic herbicides and pesticides, Ignitability, Corrosivity, Reactivity, PHC's, and PCB's.

6.1.5.b Waste Removal and Trough Decontamination

Upon receipt of the composite sample analytical results, solid waste materials currently in the troughs will be removed and placed in appropriate containers for off-site disposal.

Troughs will be decontaminated with low volume, high pressure water spray as described in Section 6.1.4.c. Wash waters will be collected, containerized and sampled for off-site disposal. Analytical parameters will be dependent upon results of sediment samples collected from the troughs.

Upon classification and approval into an approved disposal facility, solid waste and sludges will be prepared for off-site disposal and shipped to the appropriate facility.

Wash waters generated during the decontamination of the above referenced structures will be containerized and disposed of in accordance with current regulations or discharged to the sanitary sewer under permit.

6.1.6 Building No.3 Interior

RCRA characteristically hazardous soil/ash is reported to be present in a portion of Building No.3 where concrete flooring does not exist. Based on results of U.S.EPA sampling in June 1988 (sample # 112201), leachable cadmium exists above the maximum allowable concentrations (MCL) set forth in 40 CFR 261.24. In addition, EP Toxic lead levels

were near the MCL for lead.

6.1.6.a Sampling

Based upon the occurrence of characteristically hazardous soil/ash within this area, a soil sampling program will be undertaken in building No.3 to determine the vertical extent of metal contamination. Soil contamination within the building is presumed to be surficial and therefore samples will be collected from the 0.5 to 1.0 foot sampling increment. A total of five (5) samples will be collected in this area. Samples will be analyzed for EP Toxic metals (8).

6.1.6.b Soil/Ash Removal and Capping

If results of samples collected as described in section 6.1.6a are found to be less than the MCL set forth in 40 CFR 261.24, soil/ash will be excavated to 1.0 foot and staged for additional sampling prior to disposal. Upon completion of the removal, the area will be capped with a minimum of six (6) inches of concrete to form a contiguous slab with the remaining portions of the building floor.

6.1.6.c Decontamination

Upon completion of the soil/ash removal and capping as described above, the floor of Building No.3 will be decontaminated using low volume, high pressure water as described in section 6.1.4.c.

Wash waters generated during the decontamination of the above referenced structures will be containerized and disposed of in accordance with current regulations or discharged to the sanitary sewer under permit.

6.1.7 Water Treatment Area

Based upon information from BB&D, the water separator trench and tanks were used to separate primarily solids from the liquid waste wash water generated during the closed head drum cleaning operation and the cooling of drums exiting the furnace. Although oils and organics were reported to occur within the liquid in small amounts, the separated materials primarily consisted of solids.

Residual materials within the separator were cleaned out

subsequent to the consent agreement by BB&D and stored in drums for later disposal. These drums are currently stored in Building No.2 in the furnace area.

Sediments are currently present within the trench and underground 5,000 gallon settling tank. Although this material may be residue from site operations, it is believed to probably reflect wind blown materials that have collected since cessation of site operations in 1983.

6.1.7.a Treatment Tank Sampling

Settling tanks and trenches will be visually inspected to determine the physical amounts of sediment and water within these structures. Samples will be collected of sediment and water from each of the three (3) water treatment units in this area, if applicable. These structures include the separator trench, the 5,000 gallon underground settling tank and the 60,000 gallon above ground settling tank. Sediment samples will be analyzed for EP toxic metals (8), PHC's, PCB's, Reactivity and Corrosivity.

Aqueous samples will be collected from any aqueous phases noted during the inspection of the three (3) structures referenced above. Based upon current site conditions, the separator trench and 5,000 gallon settling tank are filled with water, presumably from surface run-off and precipitation. Samples will be analyzed for total RCRA metals, PCB's, Corrosivity and Ignitability (if phases are observed).

6.1.7.b Treatment Cleaning

Based upon the analytical results of samples collected from the sediment and water within these structures, water will be removed from the separator trench, 5,000 gallon separator tank and 60,000 gallon above ground tank (if applicable) and disposed of in accordance with current regulations or discharged to a sanitary sewer under permit. Thereafter, the trench and tanks will be cleaned of all sediment for subsequent disposal.

If visible petroleum stains are present on these structures after removal of all sediments, the trench and separator tanks will be decontaminated using low volume, high pressure water as described in Section 6.1.4.c.

Wash waters generated during the decontamination of the above referenced structures will be containerized and disposed of in accordance with current regulations or discharged to the sanitary sewer under permit.

6.2 PHASE II - SITE SAMPLING AND ANALYSIS

Introduction

Phase II of this Closure and Remedial Action Plan calls for the implementation of a Site Sampling and Analysis plan (SSAP). This SSAP will address the potential horizontal and vertical extent of contamination above the groundwater elevation in the furnace area, the ash pile area and the water treatment area. Upon receipt of the analytical results, area specific plan and profile drawings will be prepared to graphically indicate the extent of identified contamination within these areas. Reporting will include a written interpretation of the analytical results, a summary of field observations and recommendations for remedial action and post excavation sampling and capping, if necessary.

Although current NJDEP soil sampling frequencies call for sampling at a frequency of one (1) sample per each thirty (30) linear feet, or one (1) sample per each nine hundred (900) square feet, sample frequencies for delineation sampling proposed herein have been increased to every fifty (50) feet due to the potential extent of contamination in the subject areas. Samples will be collected from two (2) depths at each sample location (see Dwg. Sheet No. BB-006). Since current information suggest wide spread contamination within the furnace and water treatment areas, samples will be subject to complete Priority Pollutant + 40 (PP + 40) analysis. Based upon the results of these analyses, additional delineation sampling or post excavation sampling will target parameters identified during this phase of work.

Upon completion of any soil removal during Phase III remedial activities in these areas, post excavation sidewall samples will be collected at a frequency of one (1) sample per each thirty (30) linear feet. Although it is currently anticipated that cleanup of soil will extend to groundwater elevation, reported to occur at approximately 3 to 7 feet below surface elevation, areas not remediated to groundwater elevation will be sampled at the bottom at a frequency of one sample per each nine hundred (900) square feet.

6.2.1 General Test Pit Locations and Sampling Strategy

The decision to use test pits excavated with a backhoe, rather than soil borings installed with a drill rig, was prompted by the increased ability to expose soil profiles to visually characterize the soil. This may be particularly important in determining areas of the former Newark Landfill and segregating the impacts of the two operations.

Test pits will be excavated to groundwater elevation, not to exceed a maximum depth of seven (7) feet. Depending upon the concentration of organic vapors when the pit is completed, samples will be collected with spatulas or with a hand driven auger. Upon the completion of sampling at each location, each test pit will be lined with 4 mil polyethylene plastic and backfilled with the excavated material.

Prior to relocating to each subsequent sample location, the backhoe bucket will be cleaned with high pressure water. Decontamination waters will not be collected and containerized during this operation.

6.2.2 Soil Sampling and Analysis

6.2.2.a Furnace Area

Eleven (11) test pit locations have been selected within the furnace area (Drawing BB-006). Locations were selected at a frequency of one sample per each fifty (50) linear feet.

A total of twenty two (22) environmental samples will be collected during this sampling event. Two (2) soil samples will be collected from each test pit: one from either the 0 to 1' increment or on a positive bias, and the second from groundwater elevation or the bottom of the test pit if groundwater exceeds seven (7) feet. As previously indicated, each of the twenty two (22) environmental samples will be analyzed for Priority Pollutants + 40 and total petroleum hydrocarbons.

In addition to the collection of samples to detect environmental contamination, six (6) samples will be collected for analysis of EP Toxic metals. Sample locations will be selected based upon prior analytical data and on a positive bias at the time of sampling.

Specific information concerning Quality Assurance and Quality Control practices for this sampling event are described in Section 8 of this plan.

6.2.2.b Building No.'s 1,2 & 3 Interiors

Upon removal of the waste materials currently within Building No.2, the removal of residual sediments in the troughs in Building No.1, the removal of RCRA hazardous soil/ash in Building No.3 and the power washing of these buildings as specified in Phase I, the interior of Building No.'s 1, 2 and 3 will be wipe sampled to detect residual contamination from materials identified within solid wastes currently within those structures. Wipe samples will be collected from three positively biased locations in Building No.'s 2 and 3. Similarly, three (3) positively biased locations will be selected within the troughs in Building No.1.

6.2.2.c Water Treatment Area

Contamination within the water treatment area appears to be typified by localized high concentrations of PHC's and PCB's. Additional identified contaminants include metals and volatile and semi-volatile organics. Based upon these past results, all soil samples collected within this area during the Phase II investigation will be analyzed for Priority Pollutants + 40 and total petroleum hydrocarbons (PHC).

Eleven (11) test pit locations have been selected within the area of the water separation tanks and trench (Drawing BB-006). Locations were selected at a frequency of approximately one (1) sample per each fifty (50) linear feet within this area.

A total of twenty two (22) environmental samples will be collected during this sampling event. Two (2) soil samples will be collected from each test pit: one from either the 0 to 1' increment or on a positive bias and the second from groundwater elevation or the bottom of the test pit if groundwater exceeds seven (7) feet.

6.3 PHASE III - REMEDIATION OF SOIL

Phase III of this Closure and Remedial Action Plan will include the excavation and removal of contaminated soil, the removal of the underground collection tanks located at the output end of the furnace and the excavation of underground piping from the collection tanks to the water separator. Excavations will be undertaken in accordance with the procedures set forth below. The horizontal limits of excavation for this area will be determined to the extent possible through sampling described in Phase II. The vertical extent of excavation will be determined to the extent possible through sampling, as described in Phase II, and by groundwater elevation since excavation below the groundwater table is not proposed.

Remediation of soil contamination identified during the sampling set forth in Phase II of this Closure and Remedial Action Plan (Section 6.0) shall be performed by removing all contaminated soil within the following parameters:

- Areal Extent - All soil identified as being contaminated above cleanup criteria[1] (other than those soils underlying existing structures which are consistent in comparison with the background soil conditions) shall be excavated.

- Vertical Extent - Excavation of contaminated soil shall be performed to the top of the groundwater table.

Remediation shall be performed in separate and distinct phases based upon the areas of concern.

---

[1] **The cleanup criteria, ie. Performance Standard, is described in section 6.0.1.b. Background and basis is provided in sections 3.0 and 4.0.**

6.3.1 Site Preparation

Prior to the commencement of any excavation activities within the areas of contaminated soil, the following support facilities will be constructed and operational. These facilities have been developed and located in such a manner as to permit rapid removal of contaminated material with full regard to proper environmental management.

6.3.1.a. Remediation of Soil Contamination

The intent of this remediation plan is to delineate and remove from the site, to the extent practicable, source contaminated soils to ground water elevation or the extent of vertical soil contamination in the SWMUs, with the approval and concurrence of the NJDEP. For the purposes of this remediation effort, the furnace area and water treatment area, defined as a Contaminated SWMU, as described in Sections 4.0 and 5.0 of this Plan, will be excavated, stockpiled and sampled for disposal characteristics.

6.1.3.b. Decontamination Pad Construction

The decontamination pad will consist of a 3" high bermed concrete monolith underlain by crushed stone and a 20 mil or similar polyethylene liner. An area approximately 20' x 15'x 2' deep will be excavated in the Contamination Reduction Zone (CRZ) and the polyethylene liner will be laid down as a secondary containment measure. Approximately 12 cubic yards of crushed stone will be backfilled on top of the polyethylene liner to a depth of 1'. The concrete pad will consist of 6" of poured concrete sloped to a concrete sump pit (2' x 2' x 1') in the corner of the decontamination pad (figure 6-1). Prior to leaving the site, each vehicle will stop on the pad for a high pressure wash. The rinse waters generated during this procedure will be pumped from the sump pit into 55 gallon 17-H DOT approved drums for disposal at a licensed disposal facility or discharged to the local POTW, if approved by the municipal authority pursuant to N.J.A.C. 7:14A-1 et seq.

6.3.1.c. Soil Stockpile Areas

Soil stockpile areas located in the southwestern side of the property, shall be constructed in accordance with detail No.2, sheet BB-007 in the locations shown on Drawing BB-007 for the temporary storage of non-hazardous RCRA waste soil. Prior to commencing excavation of contaminated soil, the construction of soil stockpile areas shall be completed and operational.

The purpose of soil stockpile Area A is to provide a pre-sampling area for contaminated soil. Any leachate/stormwater collected within the soil stockpile area will be sampled and disposed of off-site.

6.3.1.d. Contaminated Zones

Contaminated zones shall be delineated in the field through the use of caution tape and/or snow fence. The contaminated zones shall be defined based on:

1. OSHA setback limits for open excavations.
2. Air quality monitoring results to ensure that each contaminated zone also includes all areas where air quality exceeds the maximum permissible level of 5 ppm total VOC.
3. The soil stockpile area.

This method of delineating the contaminated zone shall be implemented in the field as follows:

1. The Health and Safety Officer in consultation with the Project Manager shall determine what setbacks, if any, are to be required by OSHA based on the depth of excavation for that particular area. Any setbacks required shall be delineated in the field.
2. The initial limits of each contaminated zone shall be established around the perimeter of other areas identified through the use of "Caution" tape or equivalent.
3. During excavation, each contaminated zone

shall be further adjusted if necessary to ensure that all areas where air quality exceeds 5 ppm total VOC for more than one (1) minute are also included.

4. The Contaminated Zone shall remain in place at each excavation site until the area has been backfilled to grade with clean soil.

Upon commencement of storage activities within soil stockpile Area A, that area shall be considered to be a Contaminated Zone and shall be isolated by caution tape at its perimeter. The same air quality criteria used to expand the Contaminated Zones of excavation shall be applicable to this area as well.

6.3.1.e **Contamination Reduction Zone**

A Contamination Reduction Zone (CRZ) shall be constructed in the southern side of the property as shown on Drawing BB-007. Within this zone, a decontamination pad shall be constructed as shown on Drawing BB-007. All vehicles exiting the Contaminated Zone shall be decontaminated with high pressure water. All decontamination water shall be disposed of off-site at a licensed disposal facility or to the local POTW, if approved by the municipal authority pursuant to N.J.A.C. 7:14A-1 et seq.

6.3.1.f. **Soil Erosion Control**

All loose debris, stone and crushed asphalt shall be removed from the area and from areas of access required to perform the work. Prior to excavation of each area, sedimentation fences shall be installed downgradient of each excavation area and run-on control berms shall be constructed upgradient as necessary to control sediment transport from the work area and run-on to the work area respectively.

A soil stockpile area shall be prepared in accordance with Figure 6-1 in phases as indicated. At least one (1) phase of the soil stockpile area shall be constructed prior to the commencement of excavation work.

6.3.2 Contaminated Soil Removal

Each area of contaminated soil removal shall be operated as a separate phase of the remedial action. Prior to commencing excavation in a new area, that area will be delineated as a Contaminated Zone.

The approximate limits of each soil removal area are shown on Drawing 1 and are based on the following criteria:

1. The areal extent of the excavation shall include all soil described in section 6.1.

2. The depth of each excavation shall be to the top of the groundwater table or the extent of vertical contamination above the groundwater table.

3. Excavation of contaminated soil shall not occur at a depth greater than the footing depth of a building or structure without the approval of the project engineer, except when the slope of the excavation exceeds 1' V : 1' H away from the footing, in order to protect the structural integrity of that unit.

Excavation shall commence in accordance with the above criteria until all soil subject to the cleanup criteria has been removed from the area and stockpiled in the soil containment area for subsequent transportation offsite.

6.3.3 Post Excavation Sampling

Post Excavation Sampling of the perimeter sidewalls will be conducted to determine if sufficient soils have been removed from the horizontal axis of the excavation to meet the cleanup criteria. Perimeter sample locations and frequencies will be based upon the distance to locations previously determined to be clean and perimeter length and shape. In general, locations will be spaced a minimum of 30 linear feet apart.

Samples will be collected on a positive bias basis at the level where contamination has been previously identified in the adjacent vertical strata. Sampling methods, equipment, and Quality Assurance and Quality Control measures will be the same as indicated in Section 8.0 of this plan.

Analytical parameters will be subject to determination upon receipt of results from delineation sampling performed in accordance with Section 6.2 of this Plan.

6.3.4 Sampling of Stockpile

All stockpiled soil shall be sampled only for the purpose of waste classification in accordance with RCRA criteria for ultimate disposal. A site specific sampling protocol and QA/QC Plan is provided in Section 8.0 of this plan.

6.3.5 Disposal of Stockpile

All stockpiled soil shall be disposed of in accordance with approvals to be received from properly licensed facilities based on the results of sampling performed under Section 6.3.4.

6.3.6 Demobilization

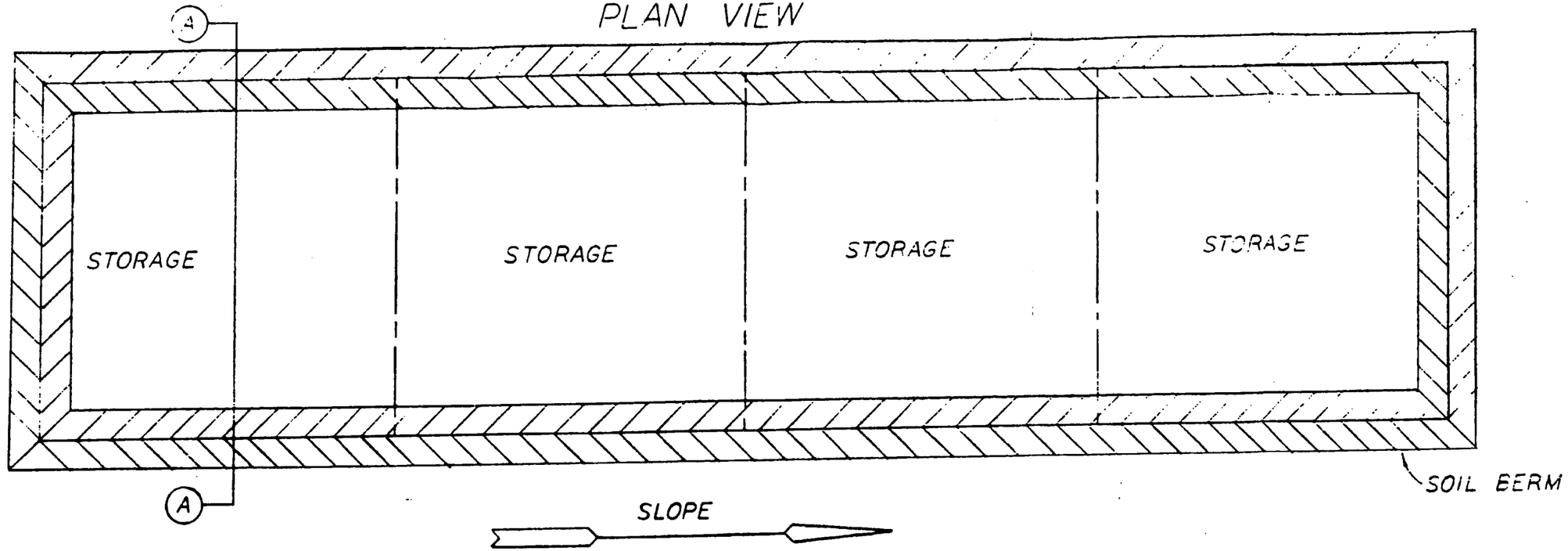
Upon completion of all construction activities set forth in this Plan, support structures and equipment shall be demobilized from the site. Demobilization shall be performed as follows:

a. The soil stockpile areas shall be decommissioned and disposed of. All residual soil and the entire liner shall be excavated and disposed of.

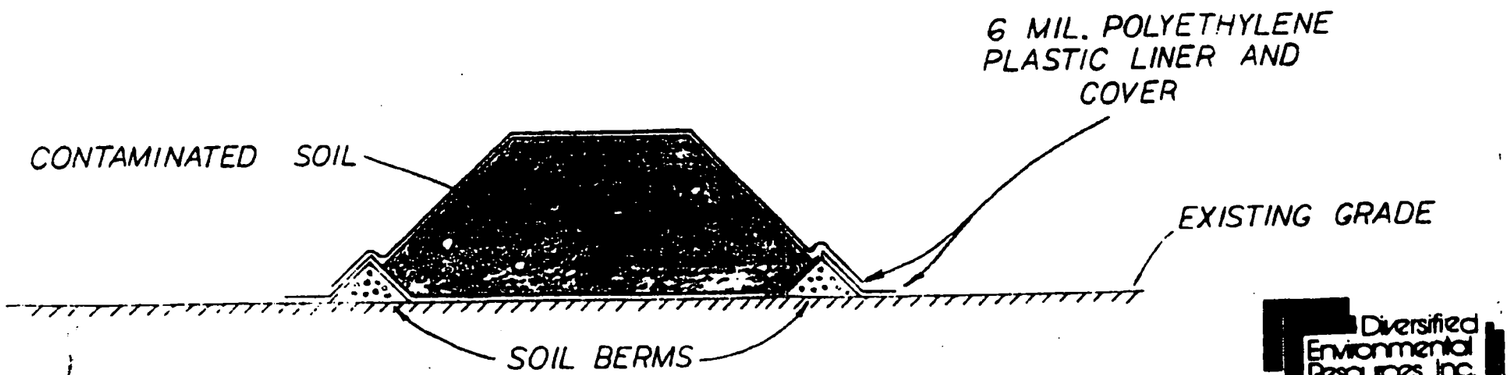
b. All equipment utilized for this project shall be thoroughly decontaminated and all decontamination water shall be disposed of as previously described. Prior to the demobilization of equipment utilized in the excavation, loading or sampling of TSCA regulated material, it shall be triple rinsed with an appropriate solvent (diesel fuel).

c. All used personal protective equipment (i.e. tyvek suits, boots, gloves, etc.) shall be disposed of.

PLAN VIEW



SECTION VIEW "A"



Diversified Environmental Resources, Inc.

SCALE: NTS	APPROVED BY JS	DRAWN BY
DATE: 1-2-90		

CONTAMINATED SOIL STORAGE AREA

BB&D Co.

DRAWING NUMBER FIG. 6-1

SECTION 7

7.0 MEASURES TO MINIMIZE ENVIRONMENTAL IMPACT

In addition to the construction of the environmental controls discussed in Section 6.3 of this plan; i.e., lined soil stockpile areas, contamination reduction zone and temporary runoff control measures, the following considerations will be addressed. They are presented based on routes of exposure as follows:

1) Air Quality Monitoring/Control
2) Stormwater Management
3) Groundwater Management

7.1 AIR QUALITY MONITORING/CONTROL

Air quality monitoring will be conducted during the remediation of the BB&D Site as follows. Based upon results and trend data from initial monitoring, monitoring frequencies will be decreased or eliminated for parameters set forth in section 7.1.2 below.

7.1.1 Air Quality Monitoring, General

The contractor will establish sampling locations to include: one perimeter upwind location that will represent ambient air quality, and one perimeter downwind station to monitor the impact of ongoing remediation on air quality. The downwind station will be relocated daily based upon actual wind direction at the time of remedial activities.

All sampling instruments, sampling methods and analytical methods will be USEPA-approved, and/or NJDEP-approved, as applicable. Technical personnel who perform air quality monitoring will have adequate and appropriate training regarding operation of instruments, collection and handling of samples and interpretation of air quality and relevant meteorological data.

7.1.2 Volatile Organic Monitoring

Continuous monitoring for volatile organic compounds will be performed at the excavation area during the remediation. This will be accomplished by the use of a flame ionization detector (OVA) or photoionization detector (HNU/TIP). Additionally, hourly monitoring will be performed at the downwind perimeter.

In the event that either VOC emissions exceed 5 ppm off-site or unacceptable levels of fugitive dust are observed off-site, all construction work shall cease and the problem(s) shall be mitigated as follows.

7.1.3 Air Quality Control VOC Emissions

The following measures will be employed as necessary to minimize VOC emissions.

1) Decrease the size of the active excavation area.
2) Cover the source with 4 mil. polyethylene.
3) Cover the source with 3M Vapor Suppression Foam.

7.1.4 Air Quality Control Particulate Contamination

Off site

There are two potential ways in which contaminants could be spread from the project area. The first is from spillage as a vehicle exits the site. In order to ensure that this problem does not occur, all vehicles shall be thoroughly decontaminated on the decontamination pad prior to leaving the project area. Additionally, trucks will be covered with tarpaulins before they leave the site in compliance with DOT specifications.

The second potential cause of contamination is fugitive dust. This problem will be managed through the application of water and/or calcium chloride to all contaminated soil which may become airborne due to site activities. Additionally, excavated material in the soil stockpile area will be covered with 6 mil polyethylene whenever it is inactive to eliminate unnecessary exposure to wind.

On site

Within the project area, the two concerns identified above could arise as contaminated soil is transported from a Contaminated Zone (Excavation Area) to the Soil Stockpile Area. In order to minimize this onsite, the following will be implemented:

1. Care will be taken to avoid spillage during the loading of trucks.

2. Equipment, which will be depositing waste in the soil containment area, will not be permitted to drive inside of the containment berm. Instead, vehicles will back up to the top of the berm and dump their loads within the lined area. This method will prevent contaminants from being tracked out of the containment area. The bucket loader will only leave the area after it has been scraped clean of any contaminated soil.

3. Fugitive dust will be suppressed by the application of water and calcium chloride and by the removal of any significant spillage within the project area.

Proper implementation of the above control measures will effectively mitigate offsite contamination and will minimize any onsite contamination.

7.2 STORMWATER MANAGEMENT

Stormwater management will be accomplished by implementing temporary controls during remedial activities.

7.2.1 Temporary Stormwater Management Controls

During excavation, temporary run-on control berms shall be installed upgradient of each excavation and silt fences shall be installed downgradient of excavations as necessary to mitigate stormwater contamination and sediment transport.

7.3 GROUNDWATER MANAGEMENT

All work to be performed under this plan will be above the groundwater elevation. Any groundwater encountered during the construction of these facilities shall be pumped as required and disposed of either at a permitted commercial waste water treatment plant or at a POTW upon approval of the Municipal Utilities Authority in conformance with N.J.A.C. 7:14A-1 et seq.

SECTION
8

8.0 QUALITY ASSURANCE AND QUALITY CONTROL PLAN

The objective of this QA/QC Plan is to outline a sampling program which ensures reliability of data collection and analysis for Bayonne Barrel and Drum Closure and Remedial Action Plan.

8.1 SAMPLING EQUIPMENT AND METHODS

Samples shall be collected at the locations and depths as described in Sections 6 and 7 of this plan. Procedural changes dictated by field conditions will be fully documented in field notes and in the report of results.

Equipment required for this project will include, but not be limited to, stainless steel augers, coliwasa samplers, drum thieves, stainless steel trowels, scoops and spatulas. All soil samples will be transferred immediately after collection to sample bottles selected by parameter as listed below. Sample bottles used for this project shall be prepared in accordance with NJDEP criterion for Metals, Volatile Organics, Polychlorinated Biphenyls, Petroleum Hydrocarbons, and Base Neutral Extractables listed within the NJDEP Field Sampling Procedures Manual, Section IV, Table 4.

Wipe and chip samples will be collected in accordance with methods set forth in section XIX of the NJDEP Field Procedures Manual.

8.2 SAMPLE CONTAINERS

The type of sample container required for the BB&D site investigation will be as follows:

A. Petroleum hydrocarbons - 40 ml glass vials with teflon septa and plastic closures (2)

B. Base Neutral/Acid Extractables - 300 ml glass bottles with teflon closures (1)

C. Volatile Organics - 40 ml glass vials with teflon septa and plastic closures (2)

D. Metals - 300 ml glass bottles with teflon closures (1)

E. PCB's - 300 ml glass bottles with teflon closures (1)

8.3 SAMPLE LABELS AND FIELD NOTES

All samples will be labeled with the following information:

a. sample number;
b. date and time of collection;
c. site name;
d. sample depth;
e. sample collector's initials;
f. sample area.

Accurate field notes will be maintained on field data sheets which will include all information listed above. Additional information recorded will include, but not be limited to, the following:

a. sample location sketch;
b. soil sample description;
c. sample method;
d. general comments, including any deviation from the Sample Plan.

8.4 EQUIPMENT DECONTAMINATION

All equipment which comes into contact with the samples shall be cleaned prior to use in the following manner:

a. detergent wash; } steam cleaned
b. tap water rinse;} " "
c. distilled/deionized water rinse;
d. 10% nitric acid rinse,(Metals analysis only);
e. distilled/deionized water rinse;
f. Pesticide grade acetone rinse;
g. air dry;
h. distilled/deionized water rinse.

Prior to field operations, all equipment will be cleaned as outlined above. If field conditions mandate the re-use of any equipment, it shall be cleaned in accordance with those methods described above.

8.5 LABORATORY METHODOLOGY

Analysis required for this Site Sample Plan will be performed by a New Jersey approved, CLP laboratory.

Analytic Methods for soil samples collected for this project will be:

a. Petroleum Hydrocarbons - method 418.1 modified for soil using Soxhlet Extraction method 3540.

b. Volatile Organics, Base Neutral/Acid Extractables in soil - USEPA CLP-IFB: most recent version. RCRA standard: "Test Methods for Evaluating Solid Waste" USEPA SW846, Third Edition, with all revisions. Forward library search of the EPA/NIH/NBS mass spectral library of compounds at the greatest apparent concentration (10% or greater of the nearest internal standard) in each organic fraction, 20 for extractable fraction.

c. Metals in soil - "Test Methods for Evaluating Solid Waste", SW 846, Third Edition, with current revisions.

d. PCB's in Soil - "Test Methods for Evaluating Solid Waste", SW 846, Third Edition, with current revisions.

The minimum detection limit for each analysis will be that which is required by the referenced analytic method.

8.6 CHAIN OF CUSTODY

Chain of custody will be maintained for all samples. Chain of custody originates with the collection of the samples and is maintained until the samples are relinquished to the laboratory. The chain of custody form details the sampler's name and organization, the site location, sample designation, the time and date of sample collection, sample depth, sample analysis and all custody changes with their appropriate signatures.

Request for analysis forms will be filled out prior to the submission of samples to the designated laboratory. They detail the site name, sample designation, date of sampling, date of request, priority and analytic parameters.

8.7 SAMPLE SPLITTING

The NJDEP will be notified a minimum of seven (7) working days prior to sampling. Sample splits will be available to the NJDEP if a Department representative is present at the time of sample collection.

8.8 QUALITY ASSURANCE SAMPLES

The matrix for all samples included in this sample plan consists of waste, waste water and soil. A trip blank consisting of distilled deionized water prepared at the laboratory will be carried in the field for each day of sampling for volatile organic compounds. In addition, a field blank shall be prepared on every other day samples are collected.

Distilled/deionized water provided by the laboratory will be poured over sample equipment and collected in laboratory prepared bottles. Trip blanks will be analyzed for volatile organics. Field blanks will be analyzed for the most comprehensive analysis required for samples on that day.

8.9 DUPLICATE SAMPLES

Duplicate samples will be collected at a frequency of approximately 5% of the total number of samples collected. Sample containers will be marked with a fictitious sample number and will be analyzed for duplicate parameter.

8.10 SAMPLE QA/QC DATA

CLP formatted QA/QC information will be provided by the laboratory for all samples submitted for analysis.

SECTION 9

9.0 HEALTH AND SAFETY PLAN

9.1 INTRODUCTION

This Health and Safety Plan (HASP) has been prepared for the Bayonne Barrel and Drum Company by Diversified Environmental Resources, Inc. (DER, Inc.), Trenton, New Jersey, for the sampling and site remediation work to be performed at BB&D, 150 Raymond Blvd., Newark, New Jersey. The following Health and Safety Plan (Plan) was prepared to provide the necessary information and procedures regarding potential health, safety and environmental hazards, along with health and safety protective measures. Modifications of such procedures may occur only after receiving the approval of the project manager.

This plan is for the protection of personnel working or contracted under the supervision of the project manager. All other personnel on site are responsible for the development and implementation of complimentary health and safety plans specific to their activities on site.

9.2 SITE DESCRIPTION

Location: Bayonne Barrel and Drum, 150, Raymond Blvd, Newark, NJ 07105.

Hazards : EP Toxic Ash, Volatile Organic Compounds, Polychlorinated Biphenyls

Area Affected: The site of a drum furnace between Building No.'s 1, 2, 3, and 4, settling tanks between Building No.1 and the Turnpike, the areas around both of which are known to be contaminated. There is also a contaminated ash pile in this area (ash from the furnace)

Surrounding Population: Industrial businesses

Topography: Site is relatively flat with a slight undulating slope towards the east and northeast. Elevations on the property range from approximately 10 to 20 feet above sea level. Drainage follows the topography into drains that traverse the eastern border of the site near the Turnpike's fence. The stormwater sewer system drains into the Passaic River. There is no natural surface water on the

site.

Additional Information: The previous site activities included the cleaning and reconditioning of drums using caustic solutions and heat. These operations produced spent solution, ash, and sludge. The storage of these waste products, provide the potential for hazardous waste contamination.

9.3 OBJECTIVES

The objective of the site entry to the contaminated area is the removal of solid waste which includes the following:

1. removal of an ash pile;
2. removal of drums;
3. removal of contaminated soil.

The site remediation will be conducted in three (3) phases as described in Section 6 of this plan and includes the removal of solid wastes, the cleaning up of applicable structures, site soil sampling, and soil remediation.

9.4 Site Organization and Coordination

The key personnel in this remediation responsible for various aspects of the Health and Safety Plan are as follows:

A. Project Advisor - To be named

B. Project Manager - To be named

C. Project Health and Safety Officer - To be named

D. Corporate Health and Safety Officer - To be named

Federal Agency Representatives: U.S. EPA Region 2

State Agency Representatives: New Jersey Department of environmental Protection, Case Management

Local Agency Representatives: Essex County Health Department

Contractors: To be named

All personnel arriving or departing the site should be logged in and out by the Project Manager. All activities on site must be cleared through the Project Manager.

9.4.1 On-Site Control

The responsibility for implementing this plan is delegated to a number of persons working on the field investigations. The Project Health and Safety Officer will recommend policy on all safety matters, including work practices, training and corrective action and provide the necessary resources to conduct the program safely. The responsibility for proper implementation of this Health and Safety Plan lies with the Project Manager and Project Health and Safety.

The Corporate Health and Safety Officer has overall responsibility for developing safety procedures and training programs, maintaining a high level of safety awareness, ensuring compliance with applicable federal and state health and safety regulations, determining appropriate protection, including selection of protective equipment, maintenance schedules, monitoring protocols and maintaining close communication with the Project Health and Safety Office and team members.

The OSC will have specific responsibility for maintaining a high level of safety awareness among team members, ensuring equipment availability and proper maintenance, enforcement of protective clothing and equipment use requirements, communication with team members on pertinent safety matters, recommending to the Project Safety Officer improved safety measures and initiating immediate corrective actions in the event of an emergency or development of an unsafe condition.

The OSC has been designated to coordinate access control and security on site. A safe perimeter has been established as

delineated in DWG BB-007. No unauthorized person should be within this area.

The onsite Command Post and Staging Area have been established adjacent to the Truck Decontamination Area (BB-007). The prevailing wind conditions will be determined daily as described in Section 7 of this Plan. Control boundaries have only been tentatively established, and the Exclusion Zone, Hotline, Contamination Reduction Zone, and Support Zone have been identified and designated as shown on DWG BB-007.

9.5 HAZARD EVALUATION

The Project Health and Safety Officer will observe the team's activities for extraneous hazards, notify the Project Manager if a problem arises and assist in the decontamination of the field team and equipment, if necessary. Should the Project Health and Safety Officer assist in decontamination procedures, the same safety level will be required to be worn. The Project Health and Safety Officer will assure that potentially hazardous activities are not undertaken by any individual.

Field team personnel are subjected to heat, cold, stress, exhaustion and potential physical and chemical exposure hazards. The Project Health and Safety Officer must be an astute observer for any signs or symptoms that may affect the safety of the field team. The Project Health and Safety Officer may substitute team personnel, order work breaks or halt operations to ensure the safety of the team. During winter, working in subfreezing temperatures, it is expected that periodic stress breaks will be taken, other than the normal, daily relief breaks. The duration of these breaks will depend upon the extent of stress and is at the discretion of the Project Health and Safety Officer. During summer, working in hot temperatures or high humidity, it is expected that periodic breaks will be taken to avoid heat exhaustion and replenish fluids. These breaks are other than normal, daily relief breaks.

The key elements in the responsibility for health and safety are the dedication of each individual project team member. Not only must they be familiar with and conform to the safety protocols prescribed in the plan, but their experience and observations will provide valuable inputs to improving overall safety.

9.5.1 Level of Protection

The following substances are known or suspected to be on site as described in Section 5 of this plan. The primary hazards of each are identified.

Name	TLV/ PEL	CHARACTERISTICS	ROUTE OF EXPOSURE	FIRST AID
Benzene	10/50ppm	colorless liquid w/ aromatic odor	inh, abs, ing, cont	irri, soap, art resp,
Ethylbenzene	2000ppm	colorless liquid w/ aromatic odor	inh, ing, con	irr, water, art
Tetrachlor-oethylene	100/200ppm	colorless liquid w/ odor like ether or chloroform	inh, ing, con	irr, soap, art
Toluene	200/300ppm	colorless liquid w/ aromatic odor	inh, abs, ing, con	irr, soap, art
Lead		various forms and characteristics		

Key
inh = inhalation
abs = absorption
ing = ingestion
cont = skin or eye contact

Eyes: irre = irrigate immediately
Skin: soap = soap wash immediately
Breath: art = artificial respiration
Skin: water = water flush immediately

Based on the information provided in the August 1984 TAT report to U.S. EPA, atmospheric contamination at the site is believed to be minimal. There were special areas where readings from an OVA exceeded background levels and they include:

"Sump pit" near incinerator's conveyor	45 times background
Inside an open drum marked TDI	5 times background
Over soil near a leaking drum	10 times background
Southeast corner of site	5 times background
Over mud by ash pile	5 times background

The remainder of the site was reported at or below the background measurement.

Due to the "open air" nature of the site and the natural ventilation provided by the wind, the site is not believed to pose any respiratory hazards during soil and water sampling. Therefore, sampling personnel should be adequately protected in EPA's "Level C" protection using general organic cartridges or canisters with particulate pre-filters or "Level D" in open portions of the site.

9.5.2 Protection Levels

Level A consists of a totally encapsulating, chemically-protective suit with supplied air or self-contained breathing apparatus, offering the highest degree of respiratory and dermal protection.

Level B provides maximal respiratory protection through the use of supplied air or self-contained breathing apparatus; the level of dermal protection is selected on the basis of anticipated hazards.

Level C incorporates a full face air-purifying respirator which is specific to the contaminant(s) of concern; the degree of dermal protection, as in Level B, depends on the anticipated dermal hazards. A supplied-air escape pack may be required in some Level C protection protocol.

Level D is a basic work uniform without respiratory protection. Air purifying respirators should be immediately available for use if the site should require upgrading to Level C.

Anticipated levels of protection:

* in areas of lead contamination (ash pile), Level C
* in areas of known PCB contamination, Level C
* in areas of known VOC's, Level D or C

9.6 Decontamination Procedures

All contaminated disposable clothing and equipment will be collected in drums for proper disposal. Non-disposable boots and gloves will be washed before leaving the site. Personnel should wash or shower after working at the site.

Emergency decontamination during a medical emergency will consist of removal of the victim's outer protective clothing. If chemical contamination is involved in the emergency situation, the victim will be washed with excess water until an ambulance arrives. If chemical contamination is not involved, then the ambulance/or hospital will be advised to complete any decontamination of the victim as they see fit.

NO CHANGES TO THE SPECIFIED LEVELS OF PROTECTION SHALL BE MADE WITHOUT THE APPROVAL OF THE SITE SAFETY OFFICER AND THE PROJECT MANAGER.

9.7 Contingency Plan

In the event of any incident involving the imminent or actual release of a significant quantity of hazardous materials to the ground or air, the person-in-charge at the site shall take the following actions:

1. Evacuate all non-essential personnel from any area within the site where they could become exposed to the hazard.

2. Call the Newark Fire Department, they have responsibility for coordinating response to hazardous waste incidents in the City of Newark.

3. Ensure that any personnel injured or exposed to hazardous materials receive appropriate treatment.

9.7.1 Communication Procedures

Two hands raised in the air is the emergency signal to indicate that all personnel should leave the Exclusion Zone.

The following hand signals will be used in case of failure of voice communications:

Hand gripping throat:	Out of air, can't breathe
Grip partner's wrist or place both hands around wrist:	Leave area immediately
Hands on top of head:	Need assistance
Thumbs up:	OK, I'm all right, I understand
Thumbs down:	No, negative

9.7.2 Notification of Authorities

In the event of a medical or other emergency, the Project Health and Safety Officer will notify the appropriate authority(ies). A list of phone numbers will be in the possession of the Project Health and Safety Officer and posted on a conspicuous place at the job site. A local map, outlining the major route to the hospitals, will also be available at the site.

9.7.3 Evacuation Plan

The most likely incidents for which evacuation will be required are:

* a heavy equipment accident resulting in physical injury to one or more persons;

* physical exhaustion related to temperature or stress;including frost bite, heat exhaustion or shock.

Emergency procedures established to deal with these incidents include, escape routes, emergency communications, first aid and procedures for fire. A minimum of one vehicle will be available at all times for evacuation procedures.

1. Escape Routes

In the event of a sudden release or fire, all personnel will move away from the location of the incident in an upwind direction and then to the site exit point. Personnel downwind of the incident will first move to the perimeter of the site and then upwind to the exit point.

2. Emergency Communications

The name, telephone number and location of each pertinent local agency (e.g. police, medical facility, ambulance, fire departments, etc.) will be conspicuously posted or will be available.

3. Fire

The equipment operator will be responsible for having a working fire extinguisher available at the equipment. It will further be the operator's responsibility to practice fire prevention measures such as periodically cleaning the equipment to keep it free of accumulated oil or grease or other combustible materials. However, in the event of an equipment fire or any other fire which cannot be controlled with available fire extinguishers, personnel will be evacuated and the local fire department will be summoned.

4. Emergency Procedures for Accidents

A properly supplied first-aid kit shall be present at the site at all times during field procedures.

Breathing Problems - In the event that any member of the field investigation team experiences any adverse affects or symptoms of exposure, including breathing difficulty, the entire party will immediately leave the site and seek medical aid for those affected.

If a member of the team becomes incapacitated or unconscious, appropriately trained members should provide reasonably emergency first aid including artificial respiration until such time that professional medical help can be obtained.

Skin Contact - Remove contaminated clothing. Wash affected area with soap and water and rinse thoroughly. Get medical aid, if necessary.

Personal Injury - Depending on severity of injury, treat symptomatically until either medical help arrives or victim is otherwise transported to the nearest hospital or medical facility.

9.7.4 List of emergency phone numbers:

Newark City Police .....(201) 911

Newark City Fire .....(201) 737-7400

Ambulance .....(201) 456-6290

NJ DEP .....(609) 292-7172

U.S. Government .....(800) 424-8804

Newark Beth Israel Medical Center.....(201) 926-7000

NJ Poison Info. & Education....(201) 926-7525

Directions to Newark Beth Israel:

From Parkway - to Union toll, East on Route 78 to first exit to Lyons Ave., make right, 4 or 5 blocks on left is Center (intersection of Lyons and Osborne).

9.8 TRAINING PROGRAM

All employees who will perform work at the site, will have completed a forty (40) hour hazardous waste site training program which satisfies the training requirements under 29CFR 1910.120(E)(2). All personnel will have undergone recent physical examinations and will not have any medical limitations associated with work at a hazardous waste site or with the use of a respirator.

Prior to any site activities, the remediation team will participate in training programs developed by the Project Health and Safety Officer. At a minimum, the training will cover:

* emergency and routine communications
* rescue operations; and,
* site evacuation.

All personnel and all subcontractors assigned to a field investigation or remediation team will be familiarized with the safety program to:

* Increase the ability of employees to react responsibly and to handle emergency situations in a safe manner under normal conditions and when physiological and psychological stresses occur.

* Educate the remediation team, regarding potential hazards at sample sites, and the importance of safety and industrial hygiene practices.

The following general field safety techniques will be discussed in the training session:

* Site topography

* Vehicles (car, truck, drill rigs)

  - Inspection

  - Operation

  - Mandatory rules, regulations and orientation

* Use of Field Equipment and Supplies

  - Work tools

  - Testing equipment

  - Sampling equipment

* Work Practices and Limitations

  - Awareness of fellow employees

  - Prohibited work practices

  - Fatigue

  - Hours of work

  - Stress

The following areas of personal protection will be discussed:

* Personal Protective Clothing
    - Clothing (gloves, aprons, coveralls, etc.)
    - Eye protection
    - Foot protection
    - Head protection
    - Respiratory Protection (where necessary)

* Limitations of Clothing and Equipment

The following actions will be discussed in preparation for any emergency:

* Availability of Emergency Services
    - Hospital ambulance services
    - Local fire and police departments
* How to obtain emergency treatment in the field
* How and when to file an incident report of an accident

The following standing orders will be in force for all site investigation and remediation teams:

* No smoking, eating, drinking or chewing gum will be allowed in the work areas.
* No open fires are permitted in the work area.
* No one under the influence of alcohol, drugs or physical or mental altering substances will be allowed onsite.

A daily safety review will be conducted by the Project Health and Safety Officer.

9.9 ENVIRONMENTAL MONITORING

The following environmental monitoring instruments shall be used on site at the specified intervals:

Volatile Organic Compounds: The use of any of the following monitoring devices may be employed:

1. Photovac
2. HNU
3. Organic Vapor Analyzer (OVA)

Monitoring will be continuous during all phases of work.

Polychlorinated Biphenyls and EP Toxic Ash:

A "time-weighted-average" will be used to determine the levels of protection for these compounds. The pumps will be flowing at 1.5-2.0 Liters/Minute with a 30 ml PVC filter(for lead determination) and a charcoal or silica gel filter to detect for PCB's. Pumps will be placed downwind and upwind from the sampling and cleanup points.

FIGURES

NEW JERSEY STATE HIGHWAY ROUTE No. 25

DOWN RAMP TO RAYMOND BOULEVARD

AREA OF CONCERN

Match Line

RAMP A

N 49°58'12" E 204.82'

S 36°29'30" E 75.82'

S 62°29'56" E 565.37'

N 77°34'29" E 15.49'

N 57°07'25" E 842.56'

S 86°03'17" E 216.25'

N. 42°11'37" E 93.36'

90°

FENCE

N.J. DOT.

BBD-C1

BBD-C4

BBD-1

BBD-2

BBD-3

BBD-4

BBD-5

BBD-6

BBD-7

BBD-8

BBD-9

BBD 4

BBD 5

BBD 6

BBD 7

0-2'	PHC	830 ppm
	VOC	N/D
	NVOC	N/D
	PCB	10.3 ppm
5'-7'	PHC	8630 ppm
	VOC	2.71 ppm
	NVOC	2.16 ppm
	PCB	N/D
10'-12'	PHC	410 ppm
	PCB	N/D
GW	VOC	N/D
	NVOC	N/D
	PCB	N/D

0-1'	AE	N/D
	BN	0.042 ppm
	Phenol	N/D
	Cyanide	N/D
5'-7'	N VOC	5.70 ppm
	VOC	3.817 ppm
	PCB	3.4 ppm
	PHC	3,100 ppm
10'-12'	PCB	N/D
	PHC	34 ppm
15'-17'	VOC	0.058 ppm
	PCB	N/D
	PHC	N/D
GW	VOC	0.055 ppm
	N VOC	0.08 ppm

0-1'	PCB	N/D
	PHC	1390 ppm
	VOC	N/D
1'-2'	PHC	810 ppm
2'-3'	PHC	1130 ppm
5'-7'	PHC	610 ppm

0-1'	PCB	42 ppm
	PHC	4410 ppm
1'-2'	PCB	23 ppm
	PHC	9630 ppm
2'-3'	PHC	7440 ppm

0-1'	PHC	460 ppm
	VOC	N/D
	N VOC	N/D
	BN	830 ppm
	AE	N/D
	Phenol	N/D
	Cyanide	N/D

0-1'	PHC	3,470 ppm
	VOC	N/D
	Phenol	10,763 ppm
1'-2'	PCB	5 ppm
	PHC	31,200 ppm
2'-3'	PHC	17,100 ppm

0-1'	PCB	N/D
	PHC	640 ppm
1'-2'	PHC	2440 ppm
2'-3'	PHC	5900 ppm

BBD-6

0-1'	PCB	N/D
	PHC	4570 ppm

BBD-7

0-1' PCB 17 ppm BBD-9

0-1' PCB N/D BBD-8

0-1' PCB N/D BBD-3

0-1'	PCB	16 ppm
	PHC	23,800 ppm
1'-2'	PHC	1040 ppm

BBD-5

0-1'	PCB	N/D
	PHC	6,040 ppm
	VOC	9.015 ppm
	N VOC	98.036 ppm
	Phenol	15 ppm
	Cyanide	8 ppm
	BN	N/D
	AE	N/D
1'-2'	PHC	10,500 ppm
5'-7'	PHC	1190 ppm

BBD-4

0-1' PCB N/D
PHC 1390 ppm BBD-2

0-1' PCB 15 ppm BBD-1

LEGEND

- SOIL SAMPLE (Berger)
- WELL (Berger)
- SURFACE SAMPLE (Raviv)
- BORING (Raviv)
- WELL (Raviv)
- N/D — NOT DETECTED
- F — FILTER OUT
- GW — GROUND WATER
- PHC — PETROLEUM HYDROCARBONS
- PCB — POLYCHLORINATED BIPHENOLS
- VOC — VOLATILE ORGANIC COMPOUNDS
- N — NON-PRIORITY
- ppm — PARTS PER MILLON
- AE — ACID EXTRACTABLES
- BN — BASE NEUTRALS
- EXISTING BUILDING
- x — x FENCE
- CONCRETE
- CENTER LINE
- PROPERTY LINE
- J — Estim. CONCRETE SAMPLES RE-EXTRACTED AS SPECIFIED IN 40CFR PART 86
- UST — UNDERGROUND STORAGE TANK
- ASH RESIDUE

NOTE:

ANALYTICAL DATA MANIFESTED ON THIS DRAWING COLLECTED FROM REPORTS PRODUCED BY; DAN RAVIV ASSOCIATES INC., 5 CENTRAL AVENUE, WEST ORANGE, NEW JERSEY, JULY 17, 1986; LOUIS BERGER & ASSOCIATES INC., 100 HALSTED STREET, EAST ORANGE, NEW JERSEY, DECEMBER 1986. LOCATIONS ARE APPROXIMATE.

NOTE:

REMEDIAL DRAWINGS OF BAYONNE BARREL & DRUM PREPARED BY DIVERSIFIED ENVIRONMENTAL RESOURCES, INC. ARE REPRESENTATIVES OF DATA EXTRACTED FROM DRAWING OF FEB. 29, 1972 COMPILED BY BORRIE, McDONALD & WATSON, SURVEYORS, NEWARK, N.J.

GRAPHIC SCALE

0 1 2 3 40 80 120 Feet

0 1 2 3 Inches

PREVIOUS SAMPLE LOCATIONS

BAYONNE BARREL & DRUM COMPANY
150 Raymond Blvd, Newark, New Jersey, 07105

Diversified Environmental Resources Inc.
1440 Pennington Road
Trenton, New Jersey 08618

Drawn By	Date
WH	12/5/89
Checked By	Scale
	1" = 40'
Project No.	Sheet No.
09-0163	BB-005b

Match Line
NEW JERSEY STATE HIGHWAY ROUTE No. 25
DOWN RAMP TO RAYMOND BOULEVARD
RAMP A
RAMP AVENUE
N.J. D.O.T.
N.J. D.O.T.
NEW JERSEY TURNPIKE
Match Line
Concrete Loading Dock (Covered)
Building No. 5
Building No. 4
Building No. 3
Building No. 2
Building No. 1
Bldg No. 6
Building No. 7
Bldg No. 8
Bldg No. 9
Concrete Trough
(Removed) Conveyor
Concrete Loading Dock (Covered)
STORAGE TANK
60,000 gal. Tank
Pump House
5,000 gal. UST
UST
Floor Drain
FENCE
0-1' PCB N/D
5'-7' PCB 2.0 ppm
PHC 670 ppm
VOC 0.12 ppm
N VOC 0.25 ppm
10'-12' PCB N/D
PHC 14 ppm
VOC N/D
N VOC 0.04 ppm
GW VOC N/D
N VOC 0.02 ppm
PCB 11.1 ppm
PHC 39,400 ppm
VOC 0.39 ppm
NVOC 0.45 ppm
0-1' AE N/D
BN 51.8 ppm
PCB 20.0 ppm
PHC 3210 (16,000) ppm
N VOC 11.56 ppm
VOC 1.76 ppm
5'-7' PHC 20,800 ppm
TANK SAMPLE No. 65191
Ign > 140°
BN 13 ppm
0-1' VOC N/D
N VOC N/D
PHC 4,330 ppm
PCB 37.4 ppm
1'-2' PCB 32 ppm
PHC 1700 ppm
2'-3' PCB N/D
PHC 130 ppm
BBD-1
0-1' PHC 1990 ppm
VOC N/D
0-2' PCB 15 ppm
1'-2' PHC 1480 ppm
2'-3' PHC 530 ppm
BBDC-2
BBDS-4
Surface PCB N/D
0-1' PCB N/D
PHC 4450 ppm
1'-2' PHC 760 ppm
2'-3' PHC 450 ppm
BBD-11
0-1' PHC 3470 ppm
VOC N/D
1'-2' PHC 31,200 ppm
PCB 5 ppm
2'-3' PHC 171,000 ppm
PCB N/D
BBD-8
0-1' PCB 8 ppm
PHC 1820 ppm
5'-7' PHC 3740 ppm
VOC 0.15 ppm
NVOC 2.34 ppm
9'-11' PHC 5230 ppm
0-1' PCB 320 ppm
PHC 16,300 ppm
BBD-17
BBD-18
BBD-15
BBD19
BBD-53
Surface PHC 850 ppm
Surface Soil No. 65192
VOC N/D
BN 734 ppm
Surface VOC N/D
AE 360 ppm
BN 134.0 ppm
TOTAL Metals 4466 ppm
J-Pesticide .324 ppm
0-4.5' PCB 43 ppm
PHC 5,920 ppm
5'-7' PCB 141 ppm
PHC 59,000 ppm
VOC 6.315 ppm
N VOC 0.012 ppm
10'-12' PCB N/D
PHC 190 ppm
15'-17' PCB N/D
PHC 28 ppm
VOC N/D
20'-22' PCB N/D
PHC 58 ppm
VOC N/D
Ground Water
PHC 4.8 ppm
VOC .03 ppm
N VOC N/D
Surface PCB N/D
0-1' PCB 6 ppm
PHC 100 ppm
VOC 0.05 ppm
NVOC 0.19 ppm
1'-2' PHC 42 ppm
2'-3' PHC 120 ppm
0-1.5' VOC 0.0058 ppm
AE 589 ppm
BN 29.6 ppm
J PCB 370 ppm
PHENOL 0.25 ppm
CYANIDE 1.70 ppm
M1192
1.5'-3.0' VOC D016 ppm
BN 373 ppm
J PCB 14 ppm
Phenol 0.13 ppm
Cyanide 2.3 ppm
M1193
0-1' PCB 23 ppm
PHC 10,700 ppm
1'-2' PCB N/D
PHC 410 ppm
2'-3' PHC 480 ppm
5'-7' PHC 120 ppm
BBD-9
BBD-12
0-1' PHC 580 ppm
1-3' PHC 230 ppm
Surface PCB 0.08 ppm
VOC N/D
NVOC N/D
BBD-10
BBD-42
M1214
Surface PCB N/D
0-1' PCB 55 ppm
PHC 8,260 ppm
VOC 1.05 ppm
N VOC 3.44 ppm
1'-2' PCB N/D
PHC 1350 ppm
BBD-13
1.5'-3.0' VOC 268.68 ppm
AE 22.85 ppm
BN 778.80 ppm
J PCB 50.0 ppm
PHENOL 0.47 ppm
CYANIDE 8.80 ppm
M1208
M1207
0-1.5' VOC 0.09 ppm
AE 0.0
BN 12,539 ppm
J PCB 5.30 ppm
PHENOL 0.62 ppm
CYANIDE 2.60 ppm
0-1.5' VOC .0021 ppm
AE 0.0
BN 4.1 ppm
J PCB 0.50 ppm
PHENOL 0.11 ppm
CYANIDE 0.18 ppm
M194
1.5'-3.0' VOC 0.0 ppm
AE 0.0 ppm
BN 1.7 ppm
J PCB 0.79 ppm
PHENOL 0.12 ppm
CYANIDE 0.69 ppm
M195
0-3.5' VOC 0.777 ppm
AE 215.0 ppm
BN 170.6 ppm
PCB N/D
Phenol 0.40 ppm
Cyanide 0.90 ppm
M1203
13'-15' VOC 0.109 ppm
AE 138.80 ppm
BN 246.70 ppm
J PCB 1.10 ppm
Phenol 1700 ppm
Cyanide 0.50 ppm
M1205
17.5'-19.' VOC 0.24 ppm
AE 12.25 ppm
BN 8.39 ppm
Phenol 0.30 ppm
Cyanide <.5 ppm
M1206
M1207
M1242
M1209
M1242
N. 42° 11' 37" E. 93.36'
N. 33° 16' 45" E. 304.35'
N. 28° 31' 06" E. 324.80'
N. 66° 41' 34" E 479.15'
N. 22° 28' 56" E 178.45'
N. 14° 53' 42" E. 165.28'
N. 86° 03' 17" E. 276.23'
N. 53° 31' 10" E. 661
Surface No. 65190
VOC 2.4 ppm
Tank Sample No. 65189
Ign > 140°
BN 15 ppm
0-2' VOC N/D
BN 24.08 ppm
J PCB 3.6 ppm
Phenol 0.7 ppm
Cyanide 1.0 ppm
M1189
Surface PHC 23,700 ppm
BBD-51
Surface VOC N/D
AE 0.708 ppm
BN 335.35 ppm
J Pesticides 0.389 ppm
M1213
Trench No. 65188
Ign. > 140°
BN 13 ppm
0-1.5' VOC 0.219 ppm
AE 0.44 ppm
BN 111.01 ppm
J PCB 19.1 ppm
Phenol 1.0 ppm
Cyanide 1.4 ppm
M1188
0-1.5' VOC 0.002 ppm
BN 44.6 ppm
J PCB 2.2 ppm
Phenol 1.40 ppm
Cyanide 1.20 ppm
M1189
1'-2' PHC 20,800 ppm
PCB 213 ppm
VOC 1.817 ppm
N VOC 2.64 ppm
5'-10' PHC 410 ppm
VOC 1.35 ppm
NVOC 0.16 ppm
AE N/D
BN N/D
BBD-16
Ground Water PCB 0.053 ppm
F PCB 0.08 ppm
PHC 2.0 ppm
VOC 1.35 ppm
N VOC 4.62 ppm
BBDC5
0-1.5' VOC N/D
AE 0.89 ppm
BN 78.87 ppm
J PCB 2.8 ppm
Phenol 1.90 ppm
Cyanide 0.73 ppm
M1209
1.5'-3.0' VOC 0.32 ppm
AE 8.25 ppm
BN 158.42 ppm
J PCB 1.10 ppm
Phenol 5.90 ppm
Cyanide 16.0 ppm
M1242
0-1.5' VOC 578.8 ppm
AE 7.45 ppm
BN 575.61 ppm
J PCB 87.0 ppm
Phenol 13.0 ppm
Cyanide 16.0 ppm
M1190
1.5'-3.0' VOC 851.7 ppm
AE 13.49 ppm
BN 861.5 ppm
J PCB 73.0 ppm
Phenol 0.24 ppm
Cyanide 13.0 ppm
M1191
0-1.5' VOC 0.045 ppm
BN 22.88 ppm
J PCB 1.80 ppm
Phenol 0.38 ppm
Cyanide 2.2 ppm
M1196
1.5'-3.0' VOC 0.049 ppm
BN 10.95 ppm
J PCB 0.759 ppm
Phenol 0.07 ppm
Cyanide 1.00 ppm
M1197
LEGEND
SOIL SAMPLE (Berger) 1985
WELL (Berger) 1985
SURFACE SAMPLE (Raviv) 1985
BORING (Raviv) 1985
WELL (Raviv) 1985
N/D NOT DETECTED
F FILTER OUT
GW GROUND WATER
PHC PETROLEUM HYDROCARBONS
PCB POLYCHLORINATED BIPHENOLS
VOC VOLATILE ORGANIC COMPOUNDS
N NON-PRIORITY
ppm PARTS PER MILLON
AE ACID EXTRACTABLES
BN BASE NEUTRALS
EXISTING BUILDING
FENCE
CONCRETE
CENTER LINE
PROPERTY LINE
J Estim. CONCRETE SAMPLES RE-EXTRACTED AS SPECIFIED IN 40 CFR PART 86
UST UNDERGROUND STORAGE TANK
SOIL SAMPLE (USEPA) 1984
WASTE WATER/SLUDGE (USEPA) 1984
NOTE:
ANALYTICAL DATA MANIFESTED ON THIS DRAWING COLLECTED FROM REPORTS PRODUCED BY; DAN RAVIV ASSOCIATES INC., 5 CENTRAL AVENUE, WEST ORANGE, NEW JERSEY, JULY 17, 1986; LOUIS BERGER & ASSOCIATES INC., 100 HALSTED STREET, EAST ORANGE, NEW JERSEY, DECEMBER 1986. LOCATIONS ARE APPROXIMATE.
NOTE:
REMEDIAL DRAWINGS OF BAYONNE BARREL & DRUM PREPARED BY DIVERSIFIED ENVIRONMENTAL RESOURCES, INC. ARE REPRESENTATIVES OF DATA EXTRACTED FROM DRAWING OF FEB 29, 1972 COMPILED BY BORRIE, McDONALD & WATSON, SURVEYORS, NEWARK, N.J.
GRAPHIC SCALE
0 1 2 3 40 80 120 Feet
0 1 2 3 Inches
PREVIOUS SAMPLE LOCATIONS
BAYONNE BARREL & DRUM COMPANY
150 Raymond Blvd., Newark, New Jersey 07105
Diversified Environmental Resources Inc.
1440 Pennington Road Trenton New Jersey 08618
Drawn By WH
Date 12/5/89
Checked By
Scale 1" = 40'
Project No 09-0163
Sheet No BB-005a

NEWARK, ESSEX COUNTY, NEW JERSEY

NEW JERSEY STATE HIGHWAY ROUTE NO. 25

DOWN RAMP TO RAYMOND BOULEVARD

RAMP 4

N 49°58'12"E 204.82'

S 39°29'50"E 71.32'

S 62°29'59"E

EXISTING FENCE

369.37'

N 77°34'29"E 156.

CONTAMINATED ZONE

N 53°31'10"E R 661.34'

R=1261.0'

A=94.22'

A=240.14'

A=80.25'

FRANK LANGELLA

30.0' RIGHT OF WAY EASEMENT GRANTED TO TEXAS EASTERN TRANSMISSION CORP.

30.0' RIGHT OF WAY EASEMENT GRANTED TO PUBLIC SERVICE ELECTRIC & GAS CO.

N 32°52'W APPROXIMATE LOCATION

BAYONNE BARREL & DRUM CO

AREA (SEE ABOVE)

129.22'

N 57°07'25"E 242.56'

113.34'

74°59'20"E 72.80'

EXISTING FENCE

N 85°03'17"E 276.23'

N.J. DOT

TO BE DELINEATED AS A CONTAMINATED ZONE UPON STOCKPILE ACTIVITIES.

SOIL STOCKPILE AREA

83.36'

304.35'

N 42°11'37"E

S 33°16'45"E

N.J. DOT

EXISTING FENCE

N.J. DOT

NEW JERSEY TURNPIKE

CONTAMINATED ZONE

Building Not at Present in Use 1 STORY CONCRETE BUILDING

1 STORY CONC

Building No. 4 BY-TRANSITE BUILDING

1 STORY CONC

1 STORY CONC BUILDING No. 2

Concrete Trough

FURNACE SHED

ROOF

2 STORY BRICK Building No. 5

1 STORY CONC

Building No. 1 STORY CONCRETE BUILDING

TRANSFORMERS

CONTAMINATED ZONE

Storage Tank

Pump House

Concrete Trough

Storage Tank

CONTAMINATION REDUCTION ZONE

DECON PAD (See Detail No.1)

SAFETY ZONE

2 STORY BRICK Bldg. No. 8

1 STORY CONC

Bldg. No.3 1 STORY CONC

Building No. 7 1 STORY STUCCO BUILDING

1 STORY CONCRETE Bldg No. 6

SAFETY ZONE

N.J. DOT

470.15'

178.45'

N 22°28'56"E 206.04'

BRIDGE

GATE

GUIDE RAIL

EXISTING FENCE

RAMP 4

RAMP 4V

16'

RAMP

CONCRETE

SLOPE

BERM

SUMP

CONCRETE

SLOPE

STONE

POLYETHYLENE

DETAIL No. 1

NORTH

Graphic Scale

Feet 0 10 20 30 40 50 100 150

Inches 0 1 2 3

NOTE;

DATA FOR MEETS AND BOUNDS, EXISTING STRUCTURES AND PROPERTIES LOCATED ON THIS DRAWING COMPILED FROM DRAWING BY BORRIE, McDONALD & WATSON, SURVEYORS. Feb. 29, 1972

CONTAMINATED ZONES

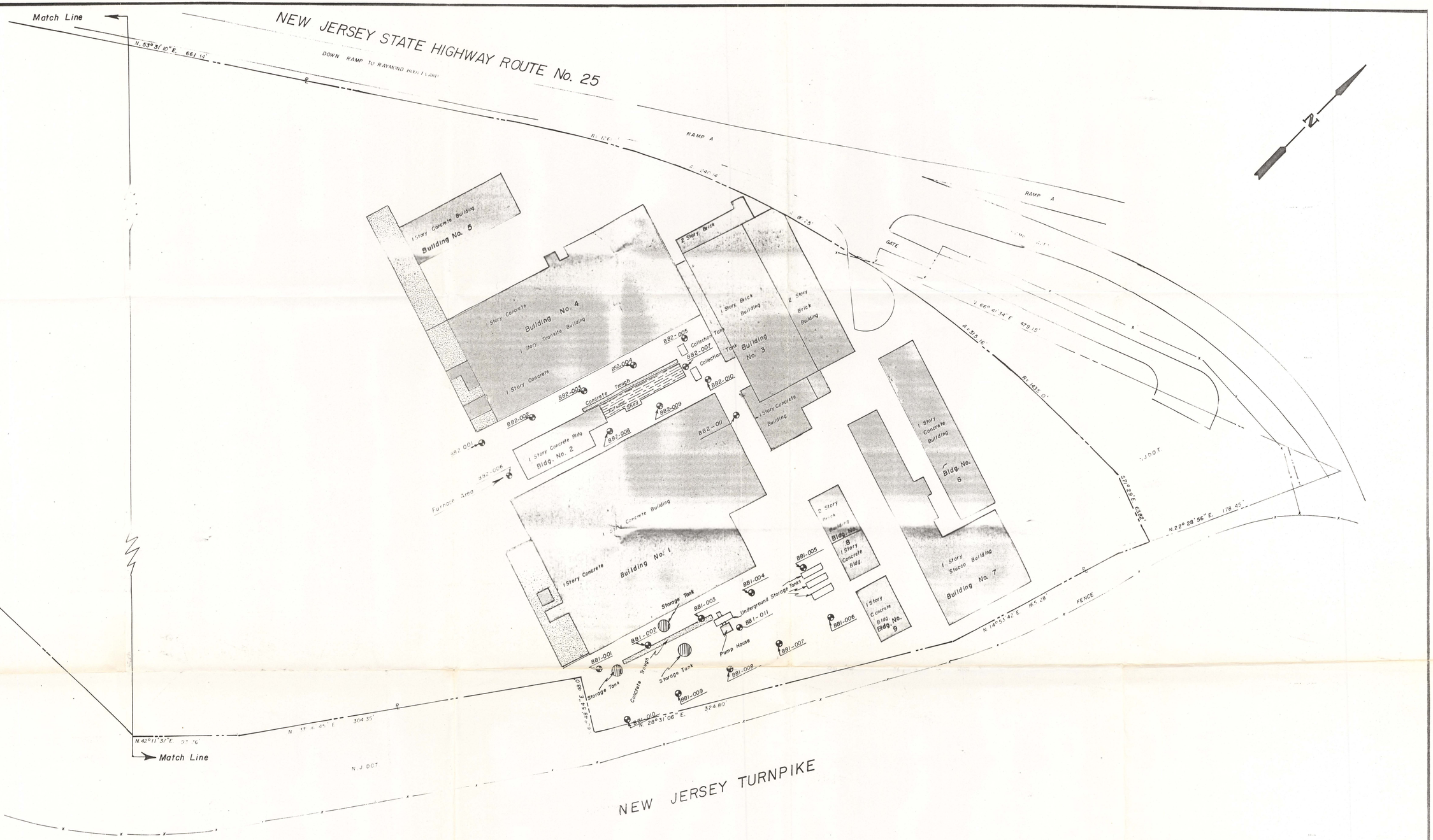
BAYONNE BARREL & DRUM COMPANY

150 Raymond Blvd., Newark, New Jersey, 07105

Diversified Environmental Resources Inc

1021 Pennington Road, Trenton, New Jersey 08618

Drawn By WLH	Date 12/28/89
Checked By JS	Scale 1" = 50'
Project No. 09-0151	Sheet No. BB-007



● = TEST PIT LOCATION

NOTE:

REMEDIAL DRAWINGS OF BAYONNE BARREL & DRUM PREPARED BY DIVERSIFIED ENVIRONMENTAL RESOURCES, INC. ARE REPRESENTATIVES OF DATA EXTRACTED FROM DRAWING OF FEB 29, 1972 COMPILED BY BORRIE, McDONALD & WATSON, SURVEYORS, NEWARK, N.J.

GRAPHIC SCALE

0 1 2 3 40 80 120 1 unit

0 1 2 3 Inches

PROPOSED SAMPLE LOCATION

BAYONNE BARREL & DRUM COMPANY
150 Raymond Blvd., Newark, New Jersey, 07105

Diversified Environmental Resources Inc.

Drawn By WH	Date 11/6/89
Checked By JS	Scale 1" = 40'
Project No. 0186.3	Drawing No. BB-006

NEWARK, ESSEX COUNTY, NEW JERSEY

NEW JERSEY STATE HIGHWAY ROUTE NO. 25
DOWN RAMP TO RAYMOND BOULEVARD
LEGEND
(FOR THIS DRAWING ONLY)
EXISTING BUILDING
ASPHALT PAVING
CINDERS
EARTH
ASH PILE
EMPTY DRUM STORAGE
TIRE PILE
NORTH
Graphic Scale
Feet 0 10 20 30 40 50 100 150
Inches 0 1 2 3
N 49°58'12"E 204.82'
N 53°31'10"E
661.34'
RAMP A
R=1261.0'
A=240.14'
A=80.25'
EMPTY 55gal. DRUMS
FRANK LANGELLA
AREA = 5.539 ACRES
30.0 RIGHT OF WAY EASEMENT GRANTED TO TEXAS EASTERN TRANSMISSION CORPORATION
30.0 RIGHT OF WAY EASEMENT GRANTED TO TRANSCONTINENTAL GAS PIPE LINE CORPORATION
BAYONNE BARREL & DRUM CO.
N 57°07'25"E
242.56'
365.37'
S 62°29'56"E
EXISTING FENCE
N 85°03'17"E
276.23'
TIRE PILE
93.36'
N 42°11'37"E
304.35'
N 33°16'45"E
N.J. DOT.
S 60°18'54"E
324.80'
N 28°31'06"E
EXISTING FENCE
LOADING PLATFORM
Building No. 5 STORY CONCRETE BUILDING
Building No. 4 STORY TRANSITE BUILDING
Building No. 3 STORY BRICK BUILDING
Building No. 1 1 STORY CONCRETE BUILDING
STORY CONC. BUILDING Bldg. No. 6
2 STORY BRICK Bldg. No. 8
Bldg. No. 9 STORY CONC.
Bldg. No. 6
Building No. 7 STORY STUCCO BUILDING
OVERHEAD PIPES
TRANSFORMERS
Concrete Trough
Storage Tank
Pump House
HOPPER
A=315.16'
R=1435.0'
NJ DOT
RIGHT OF WAY LINE
PARCEL 10 ACQUIRED BY N.J.DOT
S 7°21'29"E
63.82'
178.45'
206.04'
27.59'
N 22°28'56"E
165.28'
N 14°53'42"E
BRIDGE
GATE
NEW JERSEY TURNPIKE

NOTE;

DATA FOR MEETS AND BOUNDS, EXISTING STRUCTURES AND PROPERTIES LOCATED ON THIS DRAWING COMPILED FROM DRAWING BY BORRIE, McDONALD & WATSON, SURVEYORS. Feb. 29, 1972

ASH PILE, TIREPILE, & EMPTY DRUM LOCATIONS BASED UPON DATA FROM LOUIS BERGER & ASSOC. 1986

EXISTING SITE CONDITIONS	
BAYONNE BARREL & DRUM COMPANY 150 Raymond Blvd, Newark, New Jersey, 07105	
Drawn By WLH	Date 12/12/89
Checked By JS	Scale 1" = 50'
Project No 09 - 0151	Sheet No BB-002